



# ENVIRONMENTAL ASSESSMENT BOARD

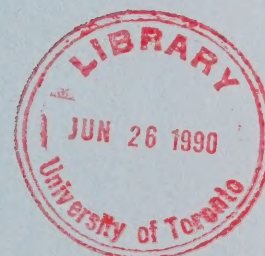
VOLUME: 213

DATE: Wednesday, June 6, 1990

BEFORE:

A. KOVEN, Chairman

E. MARTEL, Member



FOR HEARING UPDATES CALL (TOLL-FREE): 1-800-387-8810

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HEARING ON THE PROPOSAL BY THE MINISTRY OF NATURAL  
RESOURCES FOR A CLASS ENVIRONMENTAL ASSESSMENT FOR  
TIMBER MANAGEMENT ON CROWN LANDS IN ONTARIO

IN THE MATTER of the Environmental  
Assessment Act, R.S.O. 1980, c.140;

- and -

IN THE MATTER of the Class Environmental  
Assessment for Timber Management on Crown  
Lands in Ontario;

- and -

IN THE MATTER OF a Notice by the  
Honourable Jim Bradley, Minister of the  
Environment, requiring the Environmental  
Assessment Board to hold a hearing with  
respect to a Class Environmental  
Assessment (No. NR-AA-30) of an  
undertaking by the Ministry of Natural  
Resources for the activity of timber  
management on Crown Lands in Ontario.

-----  
Hearing held at the offices of the Ontario  
Highway Transport Commission, Britannica  
Building, 151 Bloor Street West, 10th Floor,  
Toronto, Ontario, on Wednesday, June  
6th, 1990, commencing at 8:30 a.m.

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VOLUME 213

BEFORE:

MRS. ANNE KOVEN  
MR. ELIE MARTEL

Chairman  
Member



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(iv)

I N D E X   O F   P R O C E E D I N G S

| <u>Witness:</u>                             | <u>Page No.</u> |
|---|-----------------|
| <u>WILSON EEDY,</u>                         |                 |
| <u>KARL SCHIEFER,</u>                       |                 |
| <u>GORDON R. CRAIG, Resumed</u>             | 38243           |
| Continued Cross-Examination by Mr. Lindgren | 38243           |
| Cross-Examination by Mr. Hanna              | 38403           |
| <br>SUBMISSIONS                             | <br>38461       |



1           ---Upon commencing at 8:30 a.m.

2                           MADAM CHAIR: Good morning. Please be  
3           seated.

4                           Mr. Lindgren?

5                           MR. LINDGREN: Thank you.

6                           Madam Chair, before I begin there is one  
7           preliminary matter that I perhaps would raise at this  
8           time and that is the letter dated June 5th from Ms.  
9           Devaul to the parties with respect to the facilities  
10          here, and we do have one concern about the possibility  
11          of moving all the transcripts and witness statements  
12          back to Yonge and Eglinton, and I don't know if this  
13          would be the appropriate time to express that concern  
14          or whether we should do that at the end of the day, but  
15          it's our position that they should not be moved, if  
16          that's at all possible.

17                          MADAM CHAIR: Well, certainly we won't  
18          move them, I think the concern was that if the  
19          parties -- the arrangement that we have right now is  
20          that all the transcripts will be put in the library at  
21          some point, and it's a matter of simply getting Ms.  
22          Devaul and Ms. Taylor to unlock the library so that you  
23          can work there.

24                          MR. LINDGREN: So the library is still  
25          accessible?



1 MADAM CHAIR: Yes. And if that  
2 arrangement isn't satisfactory, the only other  
3 alternative we have is to move the material up to the  
4 Board's Office on Eglinton.

5 MR. LINDGREN: Okay, thank you.

6 WILSON EEDY,  
7 KARL SCHIEFER,  
8 GORDON R. CRAIG, Resumed

9 CONTINUED CROSS-EXAMINATION BY MR. LINDGREN:

10 Q. Mr. Eedy, perhaps if I could start  
11 with you and ask you to turn page 3 of your witness  
12 statement. And in the first full paragraph you  
13 indicate that:

14 "...large clearcuts can result in  
15 excellent moose habitat. Large-scale  
16 clearcuts usually result in substantial  
17 patches of residual vegetation in areas  
18 of unmerchantable timber species,  
19 wetlands, buffer zones and difficult  
20 terrain."

21 And you go on to indicate that:

22 "The resulting mixture of habitat types  
23 provides the diversity that benefits the  
24 majority of wildlife species."

25 Now, in this hearing we have heard large  
clearcuts being described as clearcuts of the 3- to

1       4,000 hectare range. Now, assuming that we do have a  
2       clearcut of that magnitude and there is little or no  
3       residual vegetation or standing timber, can you advise  
4       me what species would not benefit from that situation?

5               DR. EEDY: A. First, again I'm not a  
6       forester, but it's my understanding from observations  
7       both flying over and on the ground in clearcut areas  
8       that there would be very few, if any areas, of 3- to  
9       4,000 hectares that would have no residual vegetation,  
10      no streams with buffers, no areas of concern or  
11      anything like that, that would not be protected.

12              Again, I think I would have to look at  
13      references to provide a list of all the species that  
14      could potentially not be protected by -- in an area of  
15      that nature I believe, assuming that there are some  
16      residuals and some buffer zones and, again, I just  
17      can't conceive of an area that would not have these of  
18      that size.

19              I think that there are a fairly low  
20      number of species and I think, again, that these are  
21      documented fairly well in some of the reports that were  
22      presented earlier and that Panel 10 Document 4 that I  
23      referred to yesterday does provide a list of these. I  
24      am sure they have been presented to the Board, but I  
25      wouldn't want to list things from memory. I think I'd

1 want to look at something like that before I did.

2 Q. Well, is it safe to say then that if  
3 there is a 3- to 4,000 hectare clearcut with little or  
4 no residual vegetation there are some species that  
5 won't benefit from that?

6 A. Oh certainly there would be.

7 Q. But you're not in a position to  
8 identify which species that might be?

9 A. Not to provide a comprehensive list,  
10 no.

11 Q. Can you offer any examples?

12 A. Well, I think we named some examples  
13 yesterday. You named -- the great gray owl certainly  
14 is an example. There are some species such as the  
15 martens or the woodland caribou or red squirrels,  
16 things like this as well.

17 Q. What is the scientific documentation  
18 for your comment that large-scale clearcuts usually  
19 result in substantial patches of residual vegetation?

20 A. Sorry, can you repeat that?

21 Q. What is the substantial -- or  
22 scientific documentation for that statement, the  
23 statement that large-scale clearcuts usually result in  
24 substantial portions of residuals?

25 A. Again, it's initially I guess based



1 on experience and also certainly has been referred to  
2 in some of the proceedings of this hearing, in  
3 particular, I think one piece of testimony that  
4 impressed me - and I'm not sure exactly the volume it  
5 is in - but it was Dr. Euler's testimony related to the  
6 Chapleau Game Reserve in which he indicated there are  
7 large clearcut areas and, at the same time, this area  
8 has produced a very high density of moose.

9 I'm not sure of the exact evidence that  
10 led him to testify on that, but I assume that it is  
11 related to some survey data.

12 Q. But you have no personal knowledge of  
13 any scientific studies that would document that  
14 statement?

15 A. Okay. Now, what is it I'm  
16 documenting...?

17 Q. That large-scale clearcuts result in  
18 substantial portions of residuals?

19 A. No, I'm not. I do believe that that  
20 really would be a question that should be offered to a  
21 forester with more experience in actually doing the  
22 clearcutting.

23 Q. Okay. And when you say residual  
24 vegetation, what are you referring to?

25 A. I'm referring to vegetation that is

1 left uncut basically, and this would include  
2 unmerchantable species, areas where steep terrain or  
3 other factors make cutting difficult, wetland areas,  
4 areas with buffers such as lakes and streams, areas  
5 which have been designated as areas of concern, as well  
6 as any areas which just may be missed for one reason or  
7 another.

8 Q. If there are areas that are missed  
9 for one reason or another and there are patches of  
10 residual vegetation, would you agree with me that  
11 notwithstanding that residual vegetation, large-scale  
12 clearcuts will eventually result in large areas of  
13 stands that are approximately of the same age-class?

14 I mean, over time the residuals will die  
15 and the competition will be suppressed?

16 A. I think the -- again, I'm not a  
17 forester, and I think the treatment, et cetera, could  
18 make some difference in that. The primary tree species  
19 that may be true, but I have never been in forests that  
20 there were not a variety of other kinds of species in  
21 the forests with the exception of some very small and  
22 very heavily managed plantation forests that I've  
23 experienced in southern Ontario, but mostly in  
24 conservation areas or something like that, never in the  
25 north have I run into forests that are uniformly and

1 entirely sort of one species in age.

2 Q. I think you agreed a moment ago,  
3 however, that statement may be generally true of some  
4 important or primary commercial species and, if that is  
5 the case, wouldn't you agree with me that the diversity  
6 of the age-class that you've referred to, the diversity  
7 of early successional habitat may in fact only last a  
8 short period of time?

9 A. My understanding from literature is  
10 that the important diversity of species as a habitat  
11 value is in general most valuable in the sort of maybe  
12 six or seven to 30-year range after cutting.

13 My understanding is that once the forest  
14 canopy reaches about 50 per cent cover, that the  
15 undergrowth value is possibly in the order of maybe  
16 three quarters of what it is in open areas and that it  
17 declines somewhat after that as the forest matures.

18 Q. And what implications would that have  
19 for wildlife?

20 A. It depends on the species. Some  
21 species, I should say, which require or prefer a mature  
22 habitat, although is a minority of species, there has  
23 to be some mature habitat around for them. As the  
24 forest -- as this cycle continues, it produces -- as  
25 succession continues, different species would find



1 preference in it.

2 Basically I think the sort of six or  
3 seven to 30 year after cut or after fire kind of  
4 habitat, in my understanding of the predominance of the  
5 information that I've read, that at that time you would  
6 have the greatest numbers and diversity of wildlife  
7 species.

8 It doesn't -- there's no point at which  
9 everything was a continuum, it's not sort of something  
10 that at a certain stage certain species disappears.

11 Q. The last line in the top paragraph on  
12 page 3 indicates that the diversity that results, and  
13 you're referring to the early successional habitat I  
14 believe:

15 "...the diversity...", that results  
16 "benefits the majority of wildlife  
17 species and is much more productive for  
18 wildlife than the mature forest which  
19 Existed prior to timber harvesting."

20 Would you agree with me that that does  
21 not apply -- that statement would not apply to wildlife  
22 species that require or prefer the late successional  
23 stages?

24 A. But that statement applies because  
25 the majority of species don't fall in that category.

1 I'm talking about the majority of all the species, not  
2 just the late succession species.

3 I'm not -- if I had said all species  
4 would benefit from this, you know, I would be wrong,  
5 and I didn't say all species, I said the majority of  
6 species. There are some -- by implications, there are  
7 some that would not.

8 Q. Okay, thank you. And a few moments  
9 ago you referred to buffer zones that might exist  
10 around streams.

11 A. That's correct.

12 Q. And wetlands. Those would be AOCs,  
13 is that your understanding, they may be areas of  
14 concern?

15 A. That's my understanding, yes. They  
16 would be things that would fall out of things such as  
17 the riparian guidelines or the fish protection  
18 guidelines or the moose protection guidelines or as  
19 specific areas of concern within the process, yes.

20 Q. And you are aware that harvesting or  
21 certain forms of harvesting can occur within AOCs?

22 A. I am aware, but I'm not -- I think  
23 this is selective harvesting or something, I'm not  
24 fully conversant with that.

25 Q. If that is the case, doesn't that

1 limit or qualify your answer that these buffer zones  
2 will provide some form of unharvested...

3 A. As I understand, these forms of  
4 harvesting would still leave mature forest and, again,  
5 depending on the species -- I guess the only example I  
6 know or have read of are where selective harvesting has  
7 potentially had some impact is not a boreal species,  
8 but it is the red-shouldered hawk and I believe papers,  
9 including one by Mr. Hanna, have demonstrated that they  
10 require, because of competition with red-tailed hawks,  
11 they require thicker forest in order to keep the other  
12 hawks from displacing them.

13 I don't really know of species in the  
14 north where they are heavily dependent on the density  
15 of the forest.

16 DR. SCHIEFER: A. Mr. Lindgren, perhaps  
17 I could help on the AOC guidelines. Harvesting  
18 activities are severely constrained, clearcutting is  
19 not an alternative.

20 Q. Now, what's your understanding of the  
21 limits on selection cutting; how much can one take  
22 under a selection harvest prescription? It can be  
23 quite substantial; can it not?

24 A. Well, the constraint in terms of the  
25 aquatic habitat guidelines is that it needs to be



1 demonstrated that that type and that degree of  
2 harvesting does not compromise water quality or aquatic  
3 habitat criteria. So there is a requirement to  
4 demonstrate that whatever degree and whatever type of  
5 harvesting is carried out meets that constraint.

6 Q. Dr. Eedy, on the next main  
7 paragraph -- or in page 3 you refer to the moose  
8 guidelines and I think you've indicated that, in your  
9 view, they are unnecessarily conservative in their  
10 content and in their application.

11 The only reference that I can see in this  
12 paragraph is to previous MNR testimony. I take it then  
13 that you have not conducted any scientific research to  
14 demonstrate or document that the moose guidelines are  
15 unnecessarily conservative?

16 DR. EEDY: A. Again, I don't -- I think  
17 that's taken a little out of context because that is  
18 not totally what I said.

19 What I said is, in areas where there is  
20 no critical habitat or really local reasons to apply  
21 the guidelines strictly, I feel they could be overly  
22 conservative. For instance, if one hypothetically had  
23 an area where there were no significant habitat for  
24 moose or any of the other species being protected and  
25 one did apply those guidelines strictly across the

1 whole area of the undertaking, I think they would be  
2 overly conservative.

3 I might mention - and this was something  
4 we discussed to some extent yesterday and I was  
5 spending a little bit of time last night reading it -  
6 that I think with respect to the application of these  
7 guidelines and their value for both moose and other  
8 species of animals, you had indicated at the time Dr.  
9 Euler testified, he said there was no documented field  
10 evidence for the effectiveness.

11 I believe that, as is illustrated by  
12 Exhibit 923, this is the wildlife habitat inventory and  
13 population monitoring projects paper by Dr. Baker and  
14 Dr. Euler, I was very impressed with the level of  
15 effort that the Ministry of Natural Resources is  
16 putting into rectifying that situation and I feel that  
17 there is a very impressive research program going on to  
18 resolve that particular issue.

19 And I feel that if this program does  
20 identify areas that are of significant concern for any  
21 species of wildlife and that the provincial population  
22 of the species is potentially at danger in particular  
23 areas from any kind of human activity, that there  
24 should be measures to protect that particular area or  
25 that particular species.

1                   However, I do not feel that such measures  
2                   should be applied uniformly across the area of the  
3                   undertaking because I just feel that would be overly  
4                   conservative and totally unnecessary.

5                   Q.   You are aware that the study set out  
6                   in Exhibit 923 is only now underway, we haven't got the  
7                   results of that study by any stretch of the  
8                   imagination?

9                   A.   That's correct.   And I believe that  
10                  this is the case with all scientific research, one  
11                  cannot stop the world and wait for results, but one  
12                  should, and I gather what has been referred to as  
13                  adaptive management sort of approach, utilize these  
14                  results on an ongoing basis to improve both our basic  
15                  knowledge and to improve our ability to manage for  
16                  multiple use of the resources.

17                  Q.   As a professional biologist, do you  
18                  have any concerns that the Ministry is relying on the  
19                  moose guidelines when the effectiveness of those  
20                  guidelines has not been studied or documented to this  
21                  point?

22                  A.   My understanding - and, again, this  
23                  is based on the featured species approach which I  
24                  gather is Exhibit 433 - my understanding is that in  
25                  addition to moose, featured species include threatened

1 and endangered species plus other species which have  
2 been demonstrated to be locally important within the  
3 area in question, and again with reference to Exhibit  
4 923 I think -- I understand that the research is  
5 included -- is including looking at species which  
6 benefit from the moose habitat and white-tailed deer  
7 habitat, as well as species which utilize snags, dead  
8 and downed woody material, riparian areas, mature and  
9 overmature forest stands, large areas in similar  
10 succession stages, and they go through a whole list;  
11 bald eagles, herons, ospreys, red-shouldered and  
12 Cooper's hawks, amphibians and reptiles.

13 I believe at the rate this hearing is  
14 going probably by or before the end of the hearing, or  
15 certainly within a short period afterwards, our level  
16 of knowledge will have increased significantly. It  
17 does not mean that I feel that we do not have any  
18 knowledge now.

19 To be honest, if I were conducting - and  
20 in my experience I have done a lot of this - an  
21 assessment of the importance of habitat and the  
22 potential effects of some development in any area  
23 within the area of the undertaking, the first people I  
24 would go to would be the district officers with the  
25 Ministry of Natural Resources to look at the



1 documentation that they have for their land use  
2 guidelines and to look at their database as a source of  
3 very valuable and reasonably comprehensive information  
4 on the values and importance in the local area.

5 Q. We'll return to that in a few  
6 moments, but at this point you've referred to a number  
7 of species that are currently going to be looked at.  
8 You're aware, however, that at this point we only have  
9 provincial guidelines for moose and deer and for no  
10 other species?

11 A. I gather these are provincial --  
12 again, I'm not certain as to the status of the various  
13 guidelines. I've seen guidelines for a number of other  
14 species as well which I presume are -- from your  
15 reference, are in a draft stage. I would have to ask  
16 the Ministry as to that.

17 But in my experience, and as I said  
18 this -- I have done a lot of work in the boreal forest  
19 and in most cases have been involved in meetings with  
20 the Ministry both to look at what they feel are issues  
21 and what they feel are mitigative measures that should  
22 be planned within the development and, in my  
23 experience, whether these guidelines are officially  
24 accepted or not, they are generally expected to be  
25 applied if and when a species in question is involved.

1 I understand that there was testimony in  
2 the previous panel about areas where I think osprey  
3 nests were and what the timber company had done to  
4 protect that. I certainly know of examples where eagle  
5 nests have been found and there have been buffers left  
6 around these areas.

7 So, you know, I don't -- I feel that in  
8 addition to the official guidelines, if moose and deer  
9 are the only official guidelines, that there are a  
10 number of maybe draft guidelines which are applied  
11 perhaps in the AOC process.

12 Q. I'll leave that. Can I ask you to  
13 turn to page 4, Dr. Eedy, and in the first full  
14 paragraph you indicate that:

15 "...fires can result in the death of  
16 large local populations of wildlife."

17 And can you advise me what fires in  
18 Ontario have resulted in the death of large local  
19 populations of wildlife?

20 A. I have only really ever seen one  
21 piece of research that related to that and it was not  
22 in Ontario it was in Yellowstone Park. I know of no  
23 research that has demonstrated that.

24 Again, I guess from my knowledge and  
25 having studied the behaviour of animals and of I guess

1 mammals in general, I think it's a fairly obvious  
2 conclusion that if you have a burn which covers 3- or  
3 4,000 hectares that there will be a significant number  
4 of animals killed by that, but I have no documented  
5 evidence of that.

6 In fact I think documented evidence would  
7 be almost impossible. One could get indirect evidence  
8 by doing a population survey of the area after a burn,  
9 but most of the kinds of animals, such as small mammals  
10 and birds and things like that, there would be little  
11 or nothing remaining after a major fire goes through  
12 that one could look at to prove that there were large  
13 numbers killed.

14 Q. Further down the page 4 there's a  
15 reference to the Snyder and Bissonette study and we  
16 started discussing this yesterday.

17 You cite the study for the proposition  
18 that:

19 "...pine martens...could be supported by  
20 residual areas of less than 25 ha  
21 in the region of a clearcut harvest  
22 operation."

23 First of all, can you advise me as to  
24 whether or not the Newfoundland -- that study was in  
25 Newfoundland; was it not?

1                   A. I would have to look at it to  
2 remember for sure.

3                   Q. Well, I have looked at it.

4                   A. Okay.

5                   Q. And it appears to be from  
6 Newfoundland, and if that is the case, can you advise  
7 me whether or not in Newfoundland marten is a  
8 subspecies or a different subspecies of the marten we  
9 find in Ontario?

10                  A. Yes, it is.

11                  Q. It is?

12                  A. I think it's considered an endangered  
13 species as well.

14                  Q. Do Snyder and Bissonette indicate how  
15 many martens could be supported by those residual areas  
16 and for how long?

17                  A. By a 25- hectare area?

18                  Q. Yes.

19                  A. No, they don't. Well, okay, I should  
20 qualify that. I would have to look to be certain, but  
21 I don't think there is an absolute number.

22                  I would assume that what they're talking  
23 about is probably a low number of individuals because I  
24 know that the home range of the pine marten is quite  
25 large. I don't think you would have a lot of them in



1 an area that size.

2 Q. Do you have a copy of Exhibit 501,  
3 this was Mr. Thompson's article entitled: Habitat  
4 Needs of Furbearers in relation to Logging in Boreal  
5 Ontario. I ask you to turn to page 253.

6 A. Mm-hmm.

7 Q. And in the first paragraph on the  
8 right-hand column toward the end of that paragraph we  
9 see a reference to the Snyder and Bissonette article,  
10 and as you did, there's an indication here that:

11 "Marten forage in islands of residual  
12 timber with larger islands of 25-hectares  
13 used most."

14 But if you look at the paragraph that  
15 precedes that, you see that that comment was prefaced  
16 by Mr. Thompson's view that:

17 "It has long been known that alteration  
18 of mature forest and habitats reduces  
19 marten populations."

20 And he gives some references for that.  
21 And towards the bottom of the page he refers to his own  
22 study that indicates that:

23 "Marten densities were lower by 67 to 90  
24 Per cent depending on population levels  
25 in

1 logging areas up to 40 years after  
2 logging and in uncut or mature sites near  
3 Manitouwadge, Ontario."

4 And then just turning very briefly to his  
5 concluding statements on page 259, he indicates that:

6 "Boreal furbearers fall into four  
7 categories with respect to how logging  
8 alters their populations (1) negative..."

9 And he lists marten as an example of a  
10 furbearer whose populations can be adversely affected  
11 by harvest. Do you agree with those statements, Dr.  
12 Eedy?

13 A. I have no reason to disagree with  
14 them.

15 Q. So you have no better information  
16 than what Mr. Thompson has provided to this Board  
17 through this article?

18 A. Well, within the particular  
19 references you've made I think, having read the whole  
20 article, that some of the conclusions he's come to have  
21 been upgraded by more recent work more or less.

22 Q. But you have no evidence to --

23 A. I certainly, when it comes to work on  
24 the marten, I think Mr. Thompson has certainly done  
25 considerable work on that species.

1 Q. And you have no evidence to  
2 contradict his conclusion that logging can adversely  
3 affect marten populations?

4 A. No, I have no evidence to contradict  
5 that, that within an area that is clearcut, and I think  
6 within a period of time that there can be effects on  
7 it.

8 I might also mention though that one of  
9 the papers we had talked about yesterday did refer to  
10 the fact that martens also do have use of cleared areas  
11 both in hunting and in the use of berries. That was  
12 the Runge and Theberge paper.

13 Q. In the next paragraph in paragraph 4  
14 you refer to the Brooks and Birch study which  
15 apparently took place in New England.

16 Now, first of all, can you confirm for me  
17 that this paper was published in the conference  
18 proceedings, it wasn't published in a refereed  
19 scientific journal?

20 A. It was published in conference  
21 proceedings. As to whether the proceedings were  
22 refereed or not, I don't know. Some proceedings are.

23 Q. I'm also not sure why you have  
24 included that reference here. Are you suggesting that  
25 there is a lack of harvesting or lack of early

1 successional stages in Ontario?

2 A. No, it's basically just in trying to  
3 cover the literature which relates to the topic. That  
4 particular paper talks about New England and it was  
5 just one more in a great number of papers from both  
6 within area of the undertaking and elsewhere that  
7 indicate that there is value to wildlife in early  
8 succession stages.

9 Q. While on that topic, can I ask you to  
10 turn to page 6 where we see a reference to the Smith  
11 paper, and this is in the first full paragraph, and  
12 Smith is quoted for the proposition that:

13 "Large clearcuts favour early  
14 successional wildlife species, some of  
15 which are area sensitive and do not  
16 respond to small clearcuts."

17 Can you advise me as to whether or not  
18 this was based on a study conducted in Ontario?

19 A. I would have to refer to the paper  
20 and I've gone through I think several hundred papers  
21 and I really couldn't without looking at it.

22 Q. Will you undertake to do so and  
23 advise me?

24 Now, the title of this paper in your  
25 references seems to suggest it deals with clearcutting



1 of hardwoods. Do you recall if that is the case?

2 A. The title of the paper indicates that  
3 is the case.

4 Q. In your opinion is that conclusion  
5 valid for all types of forest that we find in -- or all  
6 forest types in the boreal forest and the Great  
7 Lakes/St. Lawrence Forest?

8 A. Not based on that particular paper,  
9 but based on the majority of papers that I saw it would  
10 be.

11 Q. In the next paragraph there's a  
12 reference to the Medin paper 1986. Can you confirm for  
13 me that this was based on a work conducted in an Idaho  
14 Douglas-fir forest?

15 A. Yes, by the title I would presume  
16 that.

17 Q. And the bottom of page 6 we see some  
18 of your conclusions with respect to adverse harvesting  
19 impacts on wildlife habitat and populations, and the  
20 first one is that the harvest patterns should be varied  
21 in terms of -- in shapes.

22 Now, I take it then that you're not in a  
23 position to provide this Board with any specific  
24 prescriptions on sizes or shapes or patterns?

25 A. Not specific, no, but I think in

1       general this reference is to maximizing the diversity  
2       and, again, this is a general sort of consideration,  
3       it's not something that I can give you exact dimensions  
4       and numbers, but I believe there have been examples  
5       presented to the Board of how that sort of works.

6                   Q.   So you're not here to present any  
7       evidence as to how that can be implemented?

8                   A.   No.

9                   Q.   Okay. Your second conclusion is that  
10      adverse harvesting impacts on wildlife habitat and  
11      populations can be minimized by effectively controlling  
12      hunting pressures.

13                   Can you advise me how controlling hunting  
14      can minimize the adverse harvesting impacts or can  
15      maximize habitat diversity?

16                   A.   Again, it's the first part of that is  
17      what's appropriate, not maximizing diversity, because  
18      controlling hunter pressure doesn't affect the  
19      diversity of the habitat. It can definitely mitigate  
20      against potential impacts caused by increased access  
21      into the area.

22                   Q.   That's access, not harvesting.

23                   A.   Well, okay, I'm sorry. I guess, as  
24      included in this effect that there will be roads in the  
25      area, but the harvesting part relates to, in my

1 understanding, more a visibility question than anything  
2 else.

3 And this is, I think from my  
4 understanding, a fairly significant aspect of the  
5 potential impact of harvesting and related activities  
6 is the visibility of the animals rather than -- rather  
7 than other sort of habitat requirements such as food  
8 and this sort of thing.

9 Q. My notes from your testimony the  
10 other day indicate that you said that hunter access is  
11 the most damaging impact to be determined on a  
12 site-specific basis. Do you recall giving that  
13 testimony?

14 A. I'm not sure that I said that it is  
15 the most damaging on all cases. I think what I said is  
16 that potentially it can be one of the most significant  
17 impacts, but this really is a site-specific issue and  
18 should be dealt with on that basis.

19 Q. Is it your evidence that hunters in  
20 the bush have a greater impact on local wildlife  
21 populations and wildlife habitat than a 3- to 4,000  
22 hectare clearcut?

23 A. Again, I think that really has to be  
24 a relevant issue and it would depend on a lot of things  
25 such as how many licences occur within a wildlife

1 management unit, whether the hunting pressure is  
2 displaced from somewhere else and, consequently, may  
3 result in benefits in another area, what species are  
4 found in the area, what the degree of hunter success  
5 is, how much residual timber, because I know for a fact  
6 that an animal the size of a moose can disappear very  
7 rapidly in very -- what I would consider areas that you  
8 would think they would be very visible in.

9 It depends on a lot of factors. I don't  
10 think one can make generalized statements of that  
11 nature.

12 Q. And presumably those kinds of  
13 statements would only pertain to game species?

14 A. From a hunter impact point of view?

15 Q. Correct.

16 A. Presumably.

17 Q. So hunting would not have a greater  
18 impact than a 3- to 4,000 hectare clearcut on non-game  
19 species?

20 A. Not -- well, I mean there could be  
21 some effect because some animals are affected by human  
22 presence, and certainly if somebody is shooting a gun,  
23 I'm sure there would be some species that would be  
24 temporarily disturbed by that, but I don't think there  
25 would be significant effects.



1                   Q.   Okay.   And if a mammal such as a  
2                   moose is made more visible as a result of harvesting,  
3                   would you agree that that seems to be indicative of  
4                   habitat problems such as a lack of security cover or  
5                   thermal cover?

6                   A.   I'm not certain that there has been  
7                   proven evidence, I know there's certainly a fair bit of  
8                   information, for instance, the formulation of the moose  
9                   guideline for the 80 to 130-hectare clearcut relates  
10                  largely to the concept that winter habitat being  
11                  conifers of a certain size or greater is important for  
12                  energy and reducing snow cover and this sort of issue.

13                  It's my understanding that that  
14                  relationship has not entirely been proven and that from  
15                  that perspective, again, I think the cover issue does  
16                  perhaps become more important from a predator point of  
17                  view, including human hunters as predators.

18                  Q.   Your next --

19                  A.   I wouldn't contest that point, that I  
20                  think in areas which are proven as critical winter  
21                  habitat, that in order to protect those areas, that it  
22                  is a good idea to have some protective buffer.

23                  Q.   Your third conclusion on page 6  
24                  indicates that residual vegetation should be left to  
25                  the extent practical in areas of significant wetlands.

1                   Now, I take it that you're aware that the  
2                   Ministry has a wetland evaluation system in this  
3                   province?

4                   A.   Yes.

5                   Q.   And you're aware that it applies only  
6                   to southern Ontario wetlands?

7                   A.   Yes.

8                   Q.   And in fact there has been evidence  
9                   in this proceeding that there is no classification  
10                  system for northern Ontario wetlands or wetlands in the  
11                  area of the undertaking.  Is that your understanding?

12                  A.   That is my understanding.  I do  
13                  believe though that in northern Ontario areas of  
14                  wetlands are certainly documented, and where they are  
15                  felt to be of significant value they can become areas  
16                  of concern, or would be identified as habitat areas  
17                  within the land use guidelines and things like this.

18                  Q.   When you refer to areas of  
19                  significant wetlands, my question to you is this:  In  
20                  your opinion, would it be reasonable for this Board to  
21                  require the Ministry to produce a wetland evaluation  
22                  system that will assist in the identification and  
23                  evaluation of significant northern Ontario wetlands?

24                  A.   Are you saying is it critical for  
25                  this?

1                   Q.   Would it be reasonable for this Board  
2                   to require that of the Ministry?

3                   A.   As to whether it should be a  
4                   requirement, I think that's more of a planning issue.  
5                   I think that such areas should be -- I think it would  
6                   be valuable to identify areas where there is critical  
7                   wetland habitat from a wildlife perspective. As to  
8                   other particular values or whatever, I'm not really  
9                   prepared to speculate on these, as to whether it's  
10                  significant or not to have some condition put on it.

11                  Q.   Your fourth conclusion on the top of  
12                  page 7 indicates that unmerchantable species should be  
13                  maintained as standing timber in harvested areas. What  
14                  about stands of old growth not necessarily  
15                  unmerchantable species?

16                  Perhaps I can just ask you this question:  
17                  Earlier in this hearing Dr. Euler agreed that we need  
18                  to protect some areas of old growth from cutting in  
19                  order to fully protect or represent biological  
20                  diversity and habitat diversity. Do you agree with  
21                  that position?

22                  A.   I agree with that position. As to  
23                  the amount and where, I think is where I would not  
24                  really want to, you know, say we should protect some  
25                  hectares in such in such a location, but I think

1        somewhere within the province we should have -- I'm not  
2        prepared to say exactly where and exactly how many  
3        hectares of such should be protected, but I believe  
4        there should be some in the province and I believe that  
5        there is.

6                    Q.    Now, on the very point of location  
7        Dr. Euler indicated that the Ministry has not conducted  
8        any surveys or studies to determine where stands of old  
9        growth should be left and protected for wildlife  
10       purposes.

11                   And if that is the case, Dr. Eedy, would  
12       it be reasonable for this Board to require the Ministry  
13       to carry out such studies as a condition of approval?

14                   A.    Again, I believe that Exhibit 923  
15       indicates that the Ministry is presently working on  
16       such a program to look at mature and overmature forest  
17       stands.

18                   Q.    So it would be reasonable for the  
19       Board to require that, put it in the form of a term and  
20       condition?

21                   A.    I'm not certain that I'm really  
22       qualified to say what is reasonable or not on the point  
23       of conditions. I can certainly, from a wildlife  
24       biologist's perspective, see that that kind of  
25       information would be of value.



1 Q. Okay, thank you.

2 A. Whether it needs to be a condition, I  
3 think, is not in my...

4 Q. Aside from the issue of protecting  
5 old growth stands, what about setting aside large areas  
6 of uncut forests for area sensitive species. And on  
7 this point I would refer you to Exhibit 433 which is  
8 the paper entitled: Featured Species Management in  
9 Ontario by Dr. Baker and Dr. Euler.

10 A. The particular page?

11 Q. On page 12. Now, in the middle --  
12 this is a discussion of the limitations of the moose  
13 and deer guidelines, and on this page we see a  
14 discussion of the moose habitat guidelines, and in the  
15 second paragraph there is an indication that:

16 "In order to provide sufficient  
17 protection for the 19 species listed as  
18 being area sensitive and preferring moose  
19 winter concentration habitat, would  
20 require that areas of 100 hectares or  
21 more be provided. These areas should  
22 contain mature and old growth trees and  
23 snags should not be removed."

24 And then turning to page 14, you will see  
25 a discussion of the deer guidelines, and at the bottom

1 paragraph we see an indication that:

2 "Adequate habitat for all 49 species...",  
3 and these species are referred to in the paragraph  
4 above:

5 "...could be provided if deer wintering  
6 concentration areas are managed with  
7 a minimum size of a hundred hectares or  
8 more of core habitat, snags are retained  
9 in these areas and also in cut-over  
10 areas. A hundred hectares or more of  
11 deciduous habitat..."

12 THE REPORTER: Sorry, Mr. Lindgren, could  
13 you repeat that?

14 MR. LINDGREN: Q. I'm now at page 14 of  
15 Exhibit 433, the last paragraph, there's an indication  
16 that:

17 "Adequate habitat for all of these 49  
18 species could be provided if deer  
19 wintering concentration areas are managed  
20 with a minimum size of a hundred hectares  
21 or more of core habitat, snags are  
22 retained in these areas and also in  
23 cut-over areas. A hundred hectares or  
24 more of deciduous habitat is provided and  
25 logging and forest access activities are

1                   timed so that they do not coincide with  
2                   critical periods in the life cycles of  
3                   those species that are sensitive to human  
4                   disturbance."

5                   And, Dr. Eedy, my question to you is  
6                   this: Do you agree with those statements?

7                   DR. EEDY: A. I don't disagree with  
8                   those statements the way they are posed, no. I think  
9                   the question of, again, how many, location and whatever  
10                  I think has to be resolved on a site-specific basis,  
11                  and I also believe that there are some fairly  
12                  significant areas set aside to protect mature and  
13                  overmature habitat within the province.

14                  Q. Thank you. And where does that  
15                  occur?

16                  A. Well, for instance, in the -- as an  
17                  example that I'm most familiar with would be the  
18                  woodland caribou in Lake Superior Provincial Park and  
19                  Pukaskwa National Park.

20                  Q. Do you have any evidence to indicate  
21                  whether or not setting aside large uncut areas of  
22                  mature or old growth stands; is that a wide-spread or  
23                  prevalent practice across the area of the undertaking?

24                  A. I wouldn't know the exact amount that  
25                  is, but I believe that there are areas, a number of

1 areas that -- I can't document exactly where and  
2 exactly how much area at this time.

3 Q. And then finally your fifth  
4 conclusion on the top of page 7 indicates that:

5 "Managing the forest for a balance of  
6 even-aged classes will minimize adverse  
7 harvesting impacts and achieve habitat  
8 diversity."

9 Now, what is the scientific documentation  
10 for that statement?

11 A. Again, basically perhaps I need to  
12 explain what I'm talking about there because I may be  
13 using forestry terms in my own understanding as a  
14 wildlife biologist and I don't know whether a forester  
15 would refer to them exactly the same.

16 But basically this is again saying that  
17 over a large area -- over the area of a fairly large  
18 region within the area of undertaking that the more  
19 diversity there is the better it is for wildlife  
20 habitat and, in my view, this means that - without  
21 being specific as to the exact areas involved - that  
22 over a large part of the province there should be areas  
23 of different age-classes.

24 So, in other words, if one is cutting one  
25 shouldn't basically continuously cut for years and years



1 and years in just exactly the same area, one should  
2 allow some diversity to occur over a broad range of  
3 area. This is basically to allow the habitat for  
4 species which may not prefer a certain succession to be  
5 available within a large area, in a particular given  
6 area that they could pick as a species to have some of  
7 that habitat.

8 Q. Before I move on to featured species,  
9 I just want to ask you a couple more questions about  
10 your discussion of harvesting impacts on habitat and  
11 wildlife.

12 Where in Section 1.2, or indeed anywhere  
13 in your paper, do we find a discussion of the effects  
14 of harvest-caused fragmentation of the forest  
15 landscape?

16 A. I don't think as a term that that is  
17 discussed. I don't believe, and in my understanding of  
18 what is generally referred to as fragmentation, that it  
19 is necessarily directly applicable to just the boreal  
20 forest area.

21 Q. Is it your evidence then that there  
22 is no forest fragmentation that occurs in the boreal  
23 forest?

24 A. Again, it would depend on how you  
25 define the word.

1 Q. Well, perhaps you can advise me how  
2 you're using the concept?

3 A. I would see fragmentation as being  
4 where a disturbance has occurred which would prevent a  
5 significant portion of the population from obtaining  
6 its habitat requirements.

7 An example would be in a city. For  
8 instance, I've evaluated or looked at what some of the  
9 potential problems could be with creating a road or  
10 fence barriers within redeemed habitat areas in the  
11 City of Toronto which, if these are important as deer  
12 corridors or something, and you put a large fence or a  
13 road through there, you could put a barrier which would  
14 not allow the deer to pass from one side to the other.

15 In the boreal forest area, in areas of  
16 clearcut, I do not believe, although these clearcut  
17 areas do create a different habitat, that they create a  
18 barrier that the species that are found there cannot  
19 pass through.

20 Q. So it's your evidence that there are  
21 no forest fragmentation effects or impacts in the  
22 boreal forest?

23 A. As is my definition for them. I have  
24 certainly seen evidence of these things happening in  
25 areas of extensive agricultural activities and

1 particularly in Europe and places like that.

2 Q. Do you have any scientific evidence  
3 to support your position that there are no forest  
4 fragmentation impacts in the boreal forest?

5 A. No, I don't.

6 Q. Okay. Perhaps we can move on to the  
7 featured species which you discuss on page 7 and  
8 following in your paper.

9 Now, in the first sentence of your report  
10 under this section you indicate that 70 per cent of  
11 Ontario's wildlife species will be protected under the  
12 deer or moose guidelines. And in your oral evidence  
13 you have referred to both Exhibits 923 and 433 on that  
14 point.

15 A. I think as a matter of clarification  
16 that both the number 70 and 80 are referred to in  
17 testimony. I think the number 80 is actually what's  
18 referred to in the featured species document, Exhibit  
19 433 I think it is. Yes.

20 If one uses the numbers which are  
21 provided in the testimony that 309 is the total number  
22 of species, then I think 37 is the number which are not  
23 directly protected by the moose guidelines and divides  
24 those numbers out, one comes to slightly over the 80  
25 per cent. So the 80 per cent would be probably the

1 more correct figure.

2 Q. But there are also species that are  
3 not protected by the deer guidelines?

4 A. I haven't seen an actual number that  
5 calculates that or a percentage referred to in that  
6 case.

7 Q. And when you say 309 species, you're  
8 referring to vertebrate species?

9 A. Yes.

10 Q. Okay. Well, I'll use 70 per cent for  
11 the purposes of this discussion since that's what you  
12 use in paragraph 1 on page 7.

13 Now, in Dr. Euler's testimony he stated  
14 that there are no scientific studies or reports that  
15 support the proposition that the featured species  
16 approach will be successful in attaining available  
17 populations of all wildlife species in Ontario.

18 Do you agree with that assessment?

19 A. Again, I don't have evidence or  
20 knowledge either for or against, but I would certainly  
21 agree that Ministry of Natural Resources is in a  
22 position to know whether or not that is true and would  
23 assume that his statement on that was true at least at  
24 the time.

25 I do believe that the evidence in Exhibit



1           923 indicates that the Ministry is working hard to  
2           rectify that situation.

3                   Q.   And I take it that you have not  
4           personally conducted any scientific studies to support  
5           that proposition, that featured species will protect  
6           wildlife species in Ontario?

7                   A.   No.

8                   Q.   And you're not aware of any  
9           scientific studies conducted by the Ministry or anybody  
10          else in Ontario to support that proposition?

11                  A.   Well, I'm aware of a fair bit of  
12          literature which indicates that if one provides the  
13          habitat which is preferred by, for instance, moose or  
14          deer, that these preferences are shared by a large  
15          number of other species, and I think it's certainly a  
16          reasonable conclusion to extend that to say that the  
17          featured species approach would certainly benefit a  
18          large number of other species.

19                  Q.   Well, I think the evidence to this  
20          point has suggested that the studies of the  
21          effectiveness of moose and deer guidelines are only now  
22          underway.

23                  And if that is the case, Dr. Eedy, would  
24          you agree with me that at this point in time there is  
25          no scientific evidence that the featured species

1 approach will be successful in protecting even the 70  
2 per cent of species in Ontario?

3 A. I would agree that there is no direct  
4 scientific evidence, but I feel that there is indirect  
5 scientific evidence that would certainly support that  
6 approach and that it is, you know, professionally valid  
7 and scientifically valid evidence.

8 Q. Dr. Euler also indicated that  
9 featured species is not widely used by other  
10 jurisdictions, these other jurisdictions prefer to use  
11 indicator species, the indicator species approach. Are  
12 you in general agreement with that assessment?

13 A. Would you define for me what you  
14 understand as precisely the difference?

15 Q. Well, I'm not sure that I can because  
16 Dr. Euler has indicated that the difference between  
17 featured species and indicator species can be blurred  
18 at some point.

19 A. Yes, that is why I'm asking.

20 Q. And I will be getting to that very  
21 issue in a moment. But Dr. Euler did indicate that  
22 featured species, as he's defined it in the evidence,  
23 is not widely used by other jurisdictions and that they  
24 prefer indicator species.

25 A. I'm afraid that my --

1                   MR. FREIDIN: I don't believe Dr. Euler  
2 indicated that they prefer to use -- prefer indicator  
3 species. He certainly indicated that it's not widely  
4 used -- that featured species is not widely used, but I  
5 don't know whether the last part of your statement is  
6 accurate.

7                   MR. LINDGREN: Well, other jurisdictions  
8 use featured species, I presume they prefer it because  
9 they're using it.

10                  MR. CASSIDY: What we can do is have Mr.  
11 Lindgren refer the witness to the portion of the  
12 transcript on this part, because if there is some  
13 disagreement as what was actually said, the witness can  
14 review it perhaps and go back, Mr. Lindgren.

15                  MR. LINDGREN: I'm referring to Volume 88  
16 of the transcript, page 14719.

17                  MADAM CHAIR: Does Dr. Eedy have a copy  
18 of that transcript volume?

19                  MR. CASSIDY: I think he does, Madam  
20 Chair. That was one that was referred to yesterday;  
21 was it not, Mr. Lindgren?

22                  MR. LINDGREN: Yes.

23                  DR. EEDY: I believe my colleague has a  
24 copy.

25                  DR. SCHIEFER: (handed)

1 MR. LINDGREN: Whoops!

2 MR. CASSIDY: Wrong page?

3 MR. LINDGREN: I think I am on the wrong  
4 page.

5 MR. CASSIDY: Just a second, Dr. Eedy,  
6 don't start reading something...

7 MR. LINDGREN: I will provide it at the  
8 break.

9 DR. EEDY: Okay.

10 MR. LINDGREN: Q. Now, in his evidence  
11 Dr. Euler indicated that the featured species was not  
12 selected in Ontario on the basis of the spinoff  
13 benefits for other wildlife species; is that your  
14 understanding?

15 DR. EEDY: A. I haven't seen that exact  
16 statement, or I don't remember it from Dr. Euler.

17 Q. Well, I'll provide you with that, if  
18 that's necessary.

19 A. I would defer to him as having more  
20 knowledge of why the featured species approach was  
21 selected than I do because he's in the Ministry that  
22 has selected it...

23 MR. CASSIDY: Can you just speak up a bit  
24 when you're giving your evidence.

25 THE REPORTER: I'm sorry, Dr. Eedy?



1 MR. CASSIDY: You have to speak up, Dr.  
2 Eedy, when you're giving your evidence.

3 DR. EEDY: Well, the featured species  
4 approach document, Exhibit 433, was written by Dr.  
5 Baker and Dr. Euler, so what I'm saying is, as the  
6 author of that article and as a representative of the  
7 Ministry which has proposed that approach, I feel he  
8 would know more about why and how that approach was  
9 formed than I do.

10 MR. LINDGREN: Q. Okay, thank you. Do  
11 you have a copy of Exhibit 472? This was a series of  
12 overheads filed by Dr. Euler.

13 DR. EEDY: A. Yes, I do.

14 Q. Can I ask you to turn to page 7 of  
15 this document, the seventh page, and this is the  
16 continuum that Dr. Euler spent some time discussing.  
17 The continuum depicts increasing complexity of  
18 management. Do you have that page?

19 A. Yes, I do.

20 Q. Now, if you've reviewed Dr. Euler's  
21 testimony - and I believe that you indicated that you  
22 have - you'll be aware that Dr. Euler indicated that,  
23 in his opinion, we should move beyond featured species  
24 management and move further to the right on this  
25 continuum, and in fact he stated that, in his opinion,

1 we should skip indicator species altogether and get  
2 right into multi-species management.

3 Do you agree with those statements?

4 A. I agree that that is certainly a good  
5 ideal. As to how practical it would be, I'm not  
6 certain.

7 Q. Are you aware of any technical  
8 reasons why multi-species management could not be  
9 carried out in Ontario?

10 A. I believe that there are methods in  
11 development which would allow this, but I'm not certain  
12 that these are totally proven.

13 I certainly -- I think the concept is  
14 certainly a good one. I don't -- I guess it's  
15 basically the practicality of how much time and effort  
16 must be spent in doing this, when I feel that -- I  
17 guess that's -- I feel that, you know, it's something  
18 that has to be developed. I don't think it's something  
19 that happens overnight.

20 Q. Well, Dr. Euler indicated that only  
21 dollars and cents have prevented us from moving in that  
22 direction. So are you agreeing or disagreeing with  
23 him?

24 A. I think that's certainly one of the  
25 significant aspects of that.

1                   Q. But, in your opinion, there are other  
2 reasons why it's not practical or feasible in Ontario  
3 moving to the right on that continuum?

4                   A. I believe we are moving in that  
5 direction and what I'm saying is that I don't think we  
6 can be expected to be there overnight.

7                   Q. In your opinion as a professional  
8 biologist, would you prefer to practice featured  
9 species or multi-species management in Ontario?

10                  A. I think that the approach to extend  
11 this process as is practicable towards multi-species  
12 management is certainly good from a wildlife  
13 biologist's perspective.

14                  Q. So all things being equal, you would  
15 prefer to be at the multi-species management end of the  
16 continuum?

17                  A. I would believe to be towards that  
18 and, again, it depends on what you say by  
19 multi-species. Multi-species could be three or four,  
20 or it could be 309.

21                  I don't believe that as a population  
22 measure, you know, I believe that from a habitat point  
23 of view and incorporating research that indicates --  
24 such as illustrated in Exhibit 923, that illustrates  
25 that managing for certain habitat types will manage for

1 a variety of species, that this kind of research is  
2 good and will provide the tools for multi-species  
3 management.

4 Q. And in fact that's the type of  
5 holistic or ecosystem management that is advocated by  
6 Jack Ward Thomas and Dean Baskerville in New Brunswick?

7 A. I certainly know by Dean Baskerville,  
8 it's what I understand that he's advocating.

9 Q. And you've agreed that that's the  
10 direction we have to be moving in or should be moving  
11 in?

12 A. I understand it's the direction we  
13 are moving in.

14 Q. Now, when you reviewed the Panel 10  
15 transcript, I assume that you read Dr. Euler's  
16 discussion of some of the problems and disadvantages  
17 with featured species; correct?

18 A. I would have read them. I'm not  
19 certain that I remember everything he said, but...

20 Q. Okay. At Volume 88, page 14760.

21 MR. FREIDIN: What page, please?

22 MR. LINDGREN: 14760.

23 Q. This is in response to a question  
24 posed by Mr. Martel, and at line 21 Dr. Euler indicates  
25 that:



1 "You have to remember that we are in an  
2 evolving process and in Ontario we are  
3 evolving through this featured species  
4 management approach. Now, we are aware  
5 that there are some deficiencies in this  
6 featured species management approach..."

7 And stopping right there, do you agree  
8 with that statement; and, if so, in your view what are  
9 these deficiencies?

10 A. I believe that that is true and,  
11 again, I think referring to the Exhibit 923 it  
12 certainly demonstrates that the Ministry is intending  
13 to continue evolving the process and to continue  
14 expanding the basic knowledge.

15 I think within science this is always a  
16 continuing perspective. If there were not frontiers of  
17 knowledge to continue exploring and to continue  
18 expanding upon, there wouldn't much use for having  
19 scientists around.

20 I believe that the featured species  
21 approach as it now stands is a good approach and,  
22 although no approaches are perfect, I believe that  
23 because of that we should always be looking at  
24 bettering and perfecting that method. I believe this  
25 is going on and I think this is a good thing.

1                   As to when, first of all, I don't think  
2                   we will ever reach perfection because I don't think  
3                   anybody ever reaches perfection and I don't think  
4                   anybody should be expected to; at the same time, I feel  
5                   that it is a good thing to be continuously expanding  
6                   this base of knowledge because the more we expand it  
7                   the better the tools we have for management of wildlife  
8                   populations in particular.

9                   And as to exact times and goals for  
10                  incrementally improving this approach and this database,  
11                  you know, I think this is difficult to make any comment  
12                  on.

13                  Q. Well, my question was actually this,  
14                  Dr. Eedy: Dr. Euler has stated that there are some  
15                  deficiencies in the featured species management  
16                  approach, and I asked you: Do you agree with that and,  
17                  if so, what are some of those deficiencies?

18                  A. Yes. As I said, nothing is perfect,  
19                  so by corollary, everything must have some  
20                  deficiencies.

21                  Q. And then what are some of the  
22                  deficiencies with featured species management?

23                  A. Some of the deficiencies, I guess are  
24                  that not all of the species are covered and that we are  
25                  still expanding our knowledge base as to just how well

1       it does or does not cover all of the 309 species in  
2       Ontario. I think, as I understand the approach, that  
3       the mechanism is certainly there for locally important  
4       species to be included as featured species.

5                So I guess the main deficiency is just  
6       what our state of knowledge on the site-specific basis  
7       is and what are the locally important species. Again,  
8       I think this is a state of knowledge which is  
9       reasonable. We certainly have the mechanisms to do it  
10      and I believe that it is a state of knowledge which is  
11      expanding and I think it's a good thing that it's  
12      expanding and, as we expand it, our ability to utilize  
13      it will increase.

14               Q. Well, at page 14730 Dr. Euler  
15      indicates that:

16               "The lack of cumulative population  
17      monitoring across the province is not  
18      currently being done by the Ministry  
19      because the Ministry doesn't have the  
20      resources or facilities to do it."

21               And at line 15 he indicates that:

22               "That's one of the cons of the whole  
23      approach of featured species management".

24               And do you agree that's -- do you agree  
25      with that statement; do you agree that that's another

1           deficiency associated with featured species?

2                       A.   Again, the term cumulative monitoring  
3           may mean different things to different people, but I  
4           would certainly think that some of the programs  
5           outlined in Dr. Baker and Dr. Euler's 5th of October,  
6           1989, Exhibit 923, would lead towards rectifying some  
7           of that. Perhaps these were decisions that were made  
8           after Dr. Euler testified, but that would be really not  
9           my position to respond to.

10                      We certainly are looking at measuring --  
11           at methods of measuring wide varieties of species that  
12           would -- or wide numbers of populations and that sort  
13           of thing.

14                      Q.   And when they're proposing to measure  
15           populations, are they proposing to do comprehensive  
16           inventories or index counts for certain species?

17                      A.   I believe that this document proposes  
18           both in different cases.

19                      Q.   Okay. Then returning to page 14761,  
20           after Dr. Euler has indicated that there are  
21           deficiencies in featured species management, he goes on  
22           to say that:

23                               "The Ministry is discussing ways of  
24                               trying to deal with these deficiencies."  
25                               And he indicates that:



1 "The Ministry simply has not come up yet  
2 with the best solution for dealing with  
3 those deficiencies."

4 In your opinion, can the deficiencies be  
5 addressed?

6 MR. FREIDIN: That was in Panel 10, by  
7 the way.

8 MR. CASSIDY: What volume number are you  
9 referring to?

10 MR. LINDGREN: We're still in Volume 88,  
11 we haven't changed, Mr. Cassidy.

12 MR. CASSIDY: Do you have that, Dr. Eedy?

13 DR. EEDY: Yes, I have it right in front  
14 of me.

15 MR. CASSIDY: All right.

16 MR. FREIDIN: You were quoting from Panel  
17 10 and I just if you wanted to be a bit fairer, don't  
18 read that Dr. Euler's evidence was that the Ministry  
19 doesn't know what it should do. That may be what he  
20 said in Panel 10, but that's certainly not what the  
21 cumulative effect of the Ministry's evidence is, if  
22 you consider his evidence in Panel 16.

23 MR. LINDGREN: Thank you, Mr. Freidin,  
24 but I hadn't yet completed my question.

25 Q. And that is: Can the deficiencies be

1 addressed by moving beyond featured species management  
2 into ecosystem or multi-species management?

3 DR. EEDY: A. Again, referring to  
4 Exhibit 923, which is in October, 1989, versus the  
5 testimony which was in April of '89, it would certainly  
6 indicate to me that the Ministry has put considerable  
7 effort into coming up with these solutions and I  
8 believe that some of the things they refer to in that  
9 wildlife habitat inventory and population monitoring  
10 projects 1989-1990 is aimed towards resolving a lot of  
11 that and moving along that continuum towards the  
12 multi-species management capability.

13 Q. So your answer to my question is yes?

14 A. Yes.

15 Q. Now, as we have seen earlier this  
16 morning, Exhibit 433 indicates that for area sensitive  
17 species uncut areas of at least a hundred hectares  
18 should be protected, and in Panel 10 Dr. Euler  
19 indicated that there is no Ministry policy that seeks  
20 to protect such areas and he stated that this was  
21 another problem with the current approach.

22 Do you agree with that?

23 A. As things exist within the province,  
24 I don't see it as being a major problem, because I feel  
25 that there are certainly many areas of a hundred

1           hectares within the province which are not cut.

2                           Q.   So you're disagreeing with Dr. Euler  
3           then?

4                           A.   I think it's not what you say is  
5           disagreement, I think it's more, you know, a matter of  
6           context of how one is saying that.

7                           You know, I don't disagree that perhaps  
8           if there was some direct policy involved in that that  
9           it might afford more protection than the sort of fact  
10          that these areas do exist, but I don't think that the  
11          way forest management is practised in the province and  
12          I don't think that the way that protection of areas of  
13          the province, that this is causing significant impacts.

14                          MR. FREIDIN:   Madam Chair, if I might.  
15          Again I have to object, and if Mr. Lindgren is going to  
16          put to the witness what Dr. Euler said, I would ask  
17          that he put to the witness what Dr. Euler said in  
18          total.   I think it's misleading not to.

19                          It did go on and indicate that Dr. Euler  
20          indicated that:

21                          "We don't see an immediate problem for  
22                          these species, our concern is for the  
23                          future in developing programs and  
24                          policies to ensure that we don't have a  
25                          problem in the future."

1                   And there was evidence again in Panel 16  
2                   of that being addressed. I think the questioning is --  
3                   he's suggesting to the witness that the Ministry's  
4                   evidence somehow is that there is a shortfall and  
5                   nothing is being done about it, and I think the  
6                   evidence should be put to the witness in full and have  
7                   him comment on it in full.

8                   MR. LINDGREN: Well, Madam Chair, I'm  
9                   more than pleased to refer Dr. Eedy to the actual  
10                  citation. It's at --

11                  MR. FREIDIN: You don't have to do it,  
12                  just do it accurately when you paraphrase it.

13                  MR. LINDGREN: Well, in fact I did  
14                  paraphrase accurately, Mr. Freidin. I'm looking at  
15                  page 14761 and at the middle of that page Ms.  
16                  Swenarchuk put to Dr. Euler the same abstract from page  
17                  12 of Exhibit 433 that I have discussed with you  
18                  earlier, and she asked:

19                  "Dr. Euler, do you agree with me that  
20                  such areas are not at this time being  
21                  provided?"

22                  And Dr. Euler said:

23                  "Well, not officially in any official  
24                  statement. Now, many of your biologists  
25                  would try to keep bigger areas, but we



1 don't have an official policy that says  
2 protect them."

3 And his next comment is:

4 "That's one of the deficiencies that I  
5 talked about as we layed all this on the  
6 table."

7 And my question simply was --

8 MR. FREIDIN: Go down another paragraph,  
9 he says:

10 "So we don't see an immediate problem for  
11 these species."

12 MR. LINDGREN: That's not my question,  
13 Mr. Freidin, my question is: Do you agree that is a  
14 deficiency?

15 MR. FREIDIN: All right.

16 DR. EEDY: I guess again, as I answered,  
17 my answer really is in the context, I feel that -- and  
18 I think in agreement with what Dr. Euler has said, that  
19 I don't think this has created any significant impact  
20 on habitat or species in the province.

21 If there were such a policy, I can see  
22 where it would potentially provide an additional level  
23 of protection into the future. I don't see that there  
24 is any evidence that a necessity for that has been  
25 demonstrated.

1 MR. LINDGREN: Q. So is the lack of an  
2 official policy to protect those areas a problem or  
3 not, in your view?

4 DR. EEDY: A. I don't think it's a  
5 problem at this time, no.

6 Q. Okay, thank you. Moving on to  
7 Exhibit 381, this is the Essa Report on Effects  
8 Monitoring, and on page 6 of this report -- do you have  
9 this report, Dr. Eedy?

10 A. Yes, I to.

11 Q. At page 6 of this report in the first  
12 full paragraph there's a discussion under Resource  
13 Protection Guidelines, and there's indication that the  
14 guidelines are to provide the protection of habitat  
15 from timber management activities.

16 A. I'm sorry --

17 MADAM CHAIR: Which page is that, Mr.  
18 Lindgren?

19 MR. LINDGREN: It's page 6 of Exhibit  
20 381.

21 MR. FREIDIN: Which? There are two page  
22 6s.

23 DR. EEDY: My page 6 is a Table of  
24 Contents.

25 MADAM CHAIR: Is it in the executive

1 summary, or --

2 MR. LINDGREN: Within the executive  
3 summary, sorry.

4 Q. And I believe this actually gave rise  
5 to the same problem last time. These pages are not  
6 numbered, but it's on the 6th page of the executive  
7 summary. It's under the heading General Strategy for  
8 Monitoring.

9 DR. EEDY: A. This is the one that is  
10 referred to as McNamee Reference No. 3?

11 Q. It's the document entitled: Effects  
12 Monitoring for Resource Protection Guidelines in  
13 Ontario and it has been marked as Exhibit 381 in this  
14 proceeding.

15 A. Well, I'm sorry, the document which I  
16 was given yesterday is called Background Report to  
17 Timber Management Guidelines.

18 Q. I believe that's Exhibit 380. I'm  
19 referring to Exhibit 381.

20 A. Well, somebody gave it to me and  
21 marked it as Exhibit 381. I think it was actually you,  
22 but I'm not positive.

23 Q. Well, I didn't give you that  
24 document.

25 A. Okay. Is this --

1 Q. That looks more like it.

2 MR. CASSIDY: It should have McNamee  
3 Reference No. 4 on it.

4 DR. EEDY: Yeah, it's reference. Yeah,  
5 I'm sorry. I have two documents which are marked as  
6 Exhibit 381.

7 MR. LINDGREN: Q. Can you find the 6th  
8 page of the executive summary?

9 DR. EEDY: A. Yes.

10 Q. It's under the heading General  
11 Strategy for Monitoring, and halfway through that  
12 paragraph there is an indication that:

13 "The resource protection guidelines are  
14 intended to provide for the protection  
15 of habitat from timber management  
16 activities. To say that the guidelines  
17 are designed to protect the resource  
18 values/population from timber management  
19 activities implies that the relationship  
20 between habitat and levels of different  
21 resource values is known. Workshop  
22 discussions indicated, however, that this  
23 relationship is not well understood."

24 And at page 14709, for Mr. Freidin's  
25 benefit, Dr. Euler--



1 MR. CASSIDY: Are you going to put the  
2 question to Mr. Freidin?

3 MR. LINDGREN: Q. --Dr. Euler discussed  
4 that same paragraph and was asked if he agreed with  
5 that statement with respect to the relationship between  
6 wildlife habitat and wildlife populations, and he  
7 agreed.

8 DR. EEDY: A. Sorry, this is 14709?

9 Q. Yes. That is where the question  
10 starts. Ms. Swenarchuk read the same portion that I  
11 just read, and asked if Dr. Euler agreed. And he said,  
12 yes, basically he did.

13 Do you basically agree with the statement  
14 from the ESSA Document that I have just read to you?

15 A. I guess, first of all, my  
16 understanding of resource value and the difference  
17 between that resource value and population, if resource  
18 value is intended to have some economic or social  
19 implications, that's certainly not what I'm testifyng  
20 on.

21 Q. I don't think that's what's suggested  
22 here.

23 A. If it's taken in the context of  
24 population, I don't believe we have an absolute  
25 relationship between habitat and population and I doubt

1           that we ever will because it's a fluctuating  
2           relationship. Populations are not stable aspects in  
3           any habitat, but I believe that we do have a good state  
4           of knowledge as to any relationship between habitat and  
5           the potential of that habitat to support wildlife  
6           species, and I believe that that's a good tool in  
7           wildlife management.

8                         And, as I referred to yesterday, I think  
9           one can go back to really the father of wildlife  
10          management, Leopold in his discussion of habitat versus  
11          population saying that you can have a very high  
12          population and a poor habitat, and that could mean that  
13          several years later that population may just be going  
14          to crash; if you have a good habitat, that allows the  
15          potential for the population, assuming that it is there  
16          in a viable number to be protected and to expand  
17          potentially and to certainly remain within the area of  
18          the undertaking.

19                        So I believe that as a management tool  
20          it's much easier to work with habitats because habitat  
21          can be assessed utilizing the both means, it's not  
22          something which varies in an unpredictable manner. It  
23          just is, I think, a better and more usable tool for  
24          managing wildlife populations.

25                        Q.   But both Dr. Euler and the ESSA

1 Report indicate that the relationship between habitat  
2 and population is not well understood. Do you agree or  
3 do you not agree with that statement?

4 A. Well, what Dr. Euler had said is, it  
5 isn't that we don't know anything of it at all, it's  
6 just that it's not well understood.

7 I'm not -- I personally feel we  
8 understand the information well enough to use it as a  
9 management tool. It doesn't mean that I don't feel  
10 that we should continue to expand our knowledge on  
11 that. Really the only way we can continue to expand  
12 our knowledge in that area, though, is to use the tool.

13 MR. FREIDIN: Madam Chair, I rise again.  
14 I think the questions being put are unfair. He's not  
15 giving all of the evidence to the witness. There is  
16 pages and pages of evidence.

17 MADAM CHAIR: Mr. Freidin, I don't  
18 understand your objections. We have been here for an  
19 hour and 40 minutes and Dr. Eddy has done nothing but  
20 agree with Dr. Euler, essentially, in all of his  
21 conclusions. I don't see where there can be any  
22 objection to this.

23 MR. FREIDIN: Well, I won't make the  
24 objection now. He may agree with what Dr. Euler said,  
25 what I get concerned about, as the lawyer on behalf of

1           one of the parties, is that the interpretation of what  
2           Dr. Euler meant will be argued much further down the  
3           line.

4                       MADAM CHAIR: Are you doing this for the  
5           Board, Mr. Freidin? We understand quite clearly what  
6           Dr. Euler meant. Thank you.

7                       MR. LINDGREN: Q. Well, on page 14711,  
8           Dr. Eedy, I think Dr. Euler's testimony is quite clear.  
9           He indicates that there is uncertainty about the  
10          relationship between habitat and guidelines -- between  
11          habitat and populations.

12                      DR. EEDY: A. I don't disagree with  
13          that, and I would further say that I don't think that  
14          it is possibly within scientific knowledge or methods  
15          to ever get to a stage where there will not be some  
16          uncertainty.

17                      Q. And at line 12 on page 14711, Ms.  
18          Swenarchuk asked:

19                      "And that degree of uncertainty certainly  
20                      pertains then to conclusions to be drawn  
21                      about the degree to which moose  
22                      guidelines will provide habitat for other  
23                      species?"

24                      And Dr. Euler agreed. Do you agree with  
25          that statement?



1                   A. As that statement stands on it's own,  
2                   yes, I would agree.

3                   Q. Now, further on in this  
4                   cross-examination Dr. Euler was asked to list all  
5                   species for which the MNR has complete inventories, and  
6                   his answer was:

7                   "Moose, and deer in some areas."

8                   Do you have any further or better  
9                   evidence than that?

10                  A. I would really have to understand  
11                  what is meant by complete inventories.

12                  Q. And biological determines what is an  
13                  inventory of a population population?

14                  A. An inventory -- you know, if I were  
15                  interpreting what a complete inventory, that would mean  
16                  that it could perhaps be extended to say that we know  
17                  where every moose -- how many moose there are  
18                  everywhere in the province and exactly where they are.

19                  And I don't think we know that for any  
20                  species, and I don't think it would be reasonable to  
21                  expect to know that. I believe that there are  
22                  inventory information for -- in the province for more  
23                  than just moose and deer.

24                  Q. Well, I think the concern is that we  
25                  only have numerical quantifiable population numbers for

1 the moose population and the deer population in some  
2 areas, and for some other species we have index counts  
3 which are not population inventories; are they?

4 A. Again, I think it's all a degree of  
5 relative comparison and that such things are within a  
6 continuum and we are continuously increasing our  
7 knowledge on all of these species as time progresses.

8 Q. All 309 species?

9 A. I'm not sure that -- as time  
10 progresses, I'm sure we will increase our knowledge on  
11 all 309 species. I'm not sure -- I don't have an  
12 inventory of all the research that has been done by  
13 every scientist in Ontario right at this time.

14 Q. Well, in this testimony Dr. Euler  
15 indicated that the MNR has inventories for moose and  
16 deer and for some other species they have index counts,  
17 and I've reviewed the transcript - I'll pull the  
18 references if it's necessary - Dr. Euler indicated they  
19 have index counts for approximately 12 species of water  
20 fowl, 12 hawks, 10 herptofaunal species and 10 species  
21 of songbirds.

22 And adding those species up and combining  
23 them with the moose and deer, I get a total of  
24 approximately 45 species that we have either population  
25 data or index counts.

1                   A. That's referring to work done by  
2           Ministry of Natural Resources, or does it include all  
3           research and some consultants?

4                   Q. It included research conducted by the  
5           Ministry and on behalf of the Ministry, there was  
6           reference to FON studies and Long Point studies.

7                   A. I'm sure there are other studies  
8           conducted by professors at universities and by  
9           consulting groups working on different study areas and  
10          this sort of thing that would probably add to that. I  
11          don't know the exact number or have a definitive list  
12          of these.

13                   And, again, I would suggest that this is  
14          a point at which Dr. Euler testified within a  
15          continuing research program which, at this point in  
16          time if he were to testify, perhaps the numbers would  
17          be different because of what has gone on since that  
18          time.

19                   Again, I do not dispute that -- I'm not  
20          within the Ministry and I'm not as familiar as Dr.  
21          Euler with the Ministry's either present or ongoing  
22          projects.

23                   Q. Well, the evidence that we have in  
24          this hearing is that approximately 45 species have  
25          either population data or index counts and that would

1 represent approximately 15 per cent of the 309 species  
2 in Ontario.

3 A. That's evidence of what has been  
4 conducted.

5 Q. That's evidence at this hearing.

6 MR. CASSIDY: Well, wait a second. Look,  
7 Madam Chair, you know, we keep getting into the  
8 situation where the witness - and this may not be one  
9 party or another, one person or another - but, you  
10 know, it's difficult to follow the evidence when both  
11 people are talking, and I would just like to make that  
12 comment once again.

13 MR. LINDGREN: Q. Dr. Eedy, you were  
14 asking me to clarify my question.

15 DR. EEDY: A. And my understanding is  
16 that that evidence relates to work done by the Ministry  
17 of Natural Resources and some other groups such as FON,  
18 and it does not necessarily cover research by  
19 individuals in universities or consulting groups or  
20 private groups such as, say, Ontario Hydro who are also  
21 involved in significant research on environmental  
22 effects on baseline wildlife populations.

23 I also understand that that evidence  
24 refers to a particular point in time and I believe  
25 that, if I understand the information in Exhibit 923,



1       there is a concerted effort in place to expand that  
2       database at this time and, you know, I feel that we  
3       should always be expanding our base of knowledge in  
4       order to increase our ability to manage.

5               MADAM CHAIR: Dr. Eedy, why would an  
6       organization like Ontario Hydro not share its wildlife  
7       data with the Ministry of Natural Resources?

8               DR. EEDY: I'm sure that all of this  
9       information is available in the public domain at one  
10      time or another. In certain circumstances -- for  
11      instance, I know there is a fairly major research  
12      project going on in the Little Jackfish area. I'm not  
13      sure that this is all in the public domain at this  
14      time.

15              When I was involved in it, it was four or  
16      five years ago, and I believe some of the baseline  
17      wildlife work that we did at that time still has not  
18      necessarily reached the public domain.

19              Similar with the research projects going  
20      on at universities, the volume of research that is  
21      going on, I think, would be difficult for one person  
22      such as myself or Dr. Euler to have a total knowledge  
23      of all of that.

24              MADAM CHAIR: And do you think the  
25      proposals in Exhibit 923 are adequate to bring into the

1 MNR's --

2 DR. EEDY: I was very impressed with the  
3 effort that they are putting into increasing their base  
4 of knowledge and I think that those efforts are going  
5 to be very helpful, not only in future timber  
6 management -- or wildlife management relating to timber  
7 in the province, but also relating to any other type of  
8 development, because I feel that the information that  
9 relates to effects and mitigation for timber management  
10 is not exclusive to that industry, similar activities  
11 are taking place in a lot of other industries as well.

12 MADAM CHAIR: Is this a convenient time  
13 for a break?

14 MR. LINDGREN: Yes, it is, Madam Chair.

15 MADAM CHAIR: How much longer will you be  
16 with your cross-examination?

17 MR. LINDGREN: With any luck I may finish  
18 or should be finished before the lunch break and I've  
19 advised Mr. Hanna of that.

20 MADAM CHAIR: All right, thank you.

21 ---Recess taken at 10:15 a.m.

22 ---On resuming at 10:45 a.m.

23 MADAM CHAIR: Please be seated.

24 Mr. Cassidy, did you say Mr. Cosman was  
25 coming at 4:30?

1 MR. CASSIDY: Yes, that's correct, Madam  
2 Chair.

3 ---Discussion off the record

4 MADAM CHAIR: While we're waiting, I  
5 would put a question to the parties. We are going to  
6 have the discussion next week about Mr. Jack Ward  
7 Thomas.

8 Will the parties be making comment on Mr.  
9 Thomas' professional reputation in his field in the  
10 sense of, the Board is not going to go out and  
11 investigate itself what Mr. Thomas' stature is or what  
12 his professional recognition is.

13 Will the parties be providing some of  
14 that information to the Board in a way that the Board  
15 can digest easily and say: Yes, it's accepted that  
16 this is his stature and his profession?

17 Mr. Hanna?

18 MR. HANNA: Madam Chair, perhaps I could  
19 respond to that. I'm anticipating that before I finish  
20 today that I will be making some announcement to the  
21 Board with respect to Dr. Thomas.

22 A number of parties have been speaking to  
23 him, my party being one of them, and at the present  
24 time it appears -- well, let me just -- I might as well  
25 explain at this point. I can't give the full

1 explanation but I can give you a partial explanation.

2 We have been in discussions and had  
3 written correspondence with Dr. Thomas for almost two  
4 years now and we've had direct meetings with him  
5 discussing his availability to appear at the hearing,  
6 and we have got approval from the Director of the U.S.  
7 Forest Service Research Branch to call Dr. Thomas as an  
8 OFAH witness.

9 I haven't had a chance to discuss it with  
10 FFT yet, only because it was only yesterday that I  
11 actually -- we received the letter I believe in January  
12 getting the final confirmation, but there was some  
13 ambiguity in the letter and it was only yesterday that  
14 Dr. Quinney had the opportunity to talk again with the  
15 Director to confirm in fact that Dr. Thomas would be  
16 permitted to come and to appear as an OFAH witness.

17 I am in the process of confirming that  
18 directly with Dr. Thomas. He had indicated to us he  
19 needed the approval from his director and from the  
20 Ontario government, we've received both. We've  
21 received approval from the Director of the Wildlife  
22 Branch and from the U.S. Forest Service and so, as far  
23 as I understand, my best evidence I have at this time  
24 is that Dr. Thomas will be able to appear and that the  
25 hurdles that the Forests for Tomorrow people are



1 concerned about have been dealt with as far as he is  
2 concerned, and if that transpires and we do get the  
3 final confirmation from Dr. Thomas.

4 I only rise now simply -- your question  
5 may be somewhat redundant because it may have already  
6 been dealt with. As far as Dr. Macer goes, my party  
7 has made no overtures to him whatsoever and I can't  
8 speak with respect to him.

9 MADAM CHAIR: All right. Thank you, Mr.  
10 Hanna.

11 Mr. Lindgren?

12 MR. LINDGREN: I take it that Mr. Hanna  
13 will be speaking with Ms. Swenarchuk about this  
14 development?

15 MR. HANNA: Yes. I have apologized  
16 too -- as I mentioned, Mr. Lindgren, it wasn't my  
17 intention here to upstage someone in any way that way.  
18 I would have preferred to have talked to FFT off the  
19 the record and have dealt with this first.

20 The reason that we didn't deal with it  
21 immediately when we heard the proposal being brought  
22 forward, it's suggested that there might be some  
23 barrier that I wasn't aware of about having Dr. Thomas  
24 come forward, and so we immediately -- once we received  
25 the FFT letter, we immediately contacted U.S. Forest

1 Service in order to confirm that our understanding was  
2 in fact accurate. And certainly the Director has  
3 indicated to us that our understanding is accurate.

4 The only question is talking specifically  
5 to Dr. Thomas as far as his availability goes, but he  
6 has certainly indicated to us that he would be willing  
7 to come. His preference was, as indicated to us by Ms.  
8 Swenarchuk I believe in her letter, to come as a Board  
9 witness and we explained to him some of the  
10 difficulties that might be involved in that and he  
11 indicated to us then what route would be required for  
12 him to be called as an OFAH witness.

13 I explain that simply as a courtesy. It  
14 was not in any way that we were attempting to hide this  
15 or not to let Forests for Tomorrow know. I only got  
16 confirmation on it yesterday for discussion with Dr.  
17 Thomas.

18 MADAM CHAIR: I simply raised it this  
19 morning because had he been a witness or if he would be  
20 suggested as a Board witness, it's not all that helpful  
21 to the Board just to be given a CV of his publications,  
22 we need to get from the parties and their experts some  
23 sense of which his standing is in the field. That's  
24 obviously something the Board wouldn't go around trying  
25 to ascertain on its own.

1                   MR. HANNA: Madam Chair, that may still  
2                   be an appropriate question with respect to Dr. Macer.

3                   MADAM CHAIR: Well, I just leave that  
4                   with the parties in anticipation of a discussion next  
5                   week.

6                   MR. CASSIDY: With respect to what Mr.  
7                   Hanna has just raised, I think it would be also a  
8                   courtesy to the parties and to the Board if Mr. Hanna  
9                   can immediately, or as soon as is practical, inform the  
10                  parties and the Board when he has final confirmation  
11                  that Mr. Thomas is going to testify on his behalf,  
12                  because then the argument with respect to Mr. Thomas  
13                  would be unnecessary on the 14th.

14                  So what I would ask -- with respect to  
15                  Mr. Macer, of course, that's another matter, but with  
16                  respect to Mr. Thomas, if Mr. Hanna would be good  
17                  enough to advise the parties and the Board as soon as  
18                  possibly in advance of the 14th so maybe we can avoid  
19                  wasting time arguing that matter if in fact the party's  
20                  going to call him.

21                  And are you in a position to advise us  
22                  when you might tell us that, Mr. Hanna?

23                  MR. HANNA: My intention was to tell you  
24                  before the day is over because Dr. Quinney tried to get  
25                  Dr. Thomas several times yesterday and wasn't able to

1 get through, and I'm hoping that we will hear today.  
2 That was the reason I said I thought I'd be able to  
3 give that final confirmation, but I certainly will  
4 undertake to provide all the parties with full  
5 information as to Dr. Thomas' status as soon as I  
6 receive it.

7 MADAM CHAIR: Okay, thank you.

8 MR. CASSIDY: Thank you.

9 MADAM CHAIR: Mr. Lindgren?

10 MR. LINDGREN: Thank you, Madam Chair.

11 Q. During the break I found the  
12 transcript reference that I was not able to obtain  
13 earlier, and this was with respect to Dr. Euler's  
14 comment on the use of featured species management  
15 elsewhere. This is page 14717 in Volume 88, it's not  
16 14719 as I indicated earlier.

17 DR. EEDY: A. 14...?

18 Q. 717.

19 A. 717.

20 Q. Do you have that page?

21 A. Yes, I do.

22 Q. Okay. And at line 20 Dr. Euler  
23 indicates that he wouldn't characterize featured  
24 species as widely used, he says:

25 "It's ours and we use it and there are



1                   probably not a lot of other jurisdictions  
2                   that use it. If that is the point you  
3                   were trying to make, we can take care of  
4                   that fairly quickly. Most jurisdictions  
5                   would use the indicator approach I think.  
6                   If you're going to list what is used, the  
7                   indicator approach is a more common  
8                   approach than the one we use or the  
9                   indicator guild approach."

10                  Now, Dr. Eedy, do agree with that  
11                  assessment or do you have any further or better  
12                  information as to the use of featured species?

13                  DR. EEDY: A. Sorry. I don't have  
14                  further information as to whether one or the other  
15                  approach is used, but I also feel that there is some  
16                  confusion as to just the exact difference between the  
17                  approaches because I think they are very similar.

18                  Q. Dr. Eedy, are you aware of any other  
19                  jurisdiction besides Ontario that uses featured species  
20                  management as you understand that concept?

21                  A. I'm aware of other jurisdictions that  
22                  have guidelines similar to the moose habitat guidelines  
23                  in Ontario, and if that -- if in using those guidelines  
24                  is assumed to be featured species management or whether  
25                  it's indicator species management, this is where I

1 think the confusion might occur. But I'm not -- I  
2 don't have a comprehensive list of all such areas.

3 Q. So you've indicated other  
4 jurisdictions may have something that approximates our  
5 moose guidelines?

6 A. Yeah.

7 Q. But do those jurisdictions practice  
8 featured species management as you've described the  
9 term before this Board?

10 A. They require the use or recommend the  
11 use of guidelines to protect certain species which,  
12 again, as to whether this is featured species or  
13 indicator species I think is largely a matter of  
14 terminology.

15 MR. MARTEL: What is the difference then?

16 DR. EEDY: Perhaps -- in my understanding  
17 there is sort of minimal difference, but the indicator  
18 species is a species which represents a group of  
19 animals which have similar habitat or other  
20 requirements; where I think the featured species  
21 approaches it somewhat differently by saying that we  
22 will feature this species as being important in the  
23 area and also assume that other species with similar  
24 habitat requirements are protected by protecting that  
25 species.

1 MR. MARTEL: Just numbers then.

2 DR. EEDY: Yeah, I guess maybe somebody  
3 else would want to define that more comprehensively,  
4 but my understanding is that there really isn't a great  
5 deal of difference.

6 DR. SCHIEFER: Mr. Martel, perhaps I  
7 could add a little to that. I think it's a question of  
8 the criteria used for selection. Normally an indicator  
9 species is selected based on ecological criteria, it  
10 does represent a guild species or a group of species  
11 consideration. Featured species, it can be featured  
12 for ecological criteria; in other words, you can  
13 feature a species because it is a good indicator, or  
14 you can also add criteria such as economic value or  
15 importance.

16 MR. LINDGREN: Thank you, Dr. Schiefer.  
17 I will return to that point in a few moments.

18 Q. Dr. Eedy, as you have defined  
19 featured species management and as Dr. Schiefer has  
20 explained it, are there any other jurisdictions that  
21 practice featured species management in the manner that  
22 it's practised in Ontario, in the sense that moose have  
23 been featured provincially, not because of the spinoff  
24 benefits to other species, but because they are an  
25 important animal to the province?

1 DR. EEDY: A. I think that that question  
2 is somewhat difficult because I'm not really party to  
3 the reason why a particular jurisdiction may have  
4 guidelines for a species such as moose, as to whether  
5 they chose the animal because of its economic value or  
6 its recreational value or some ecological value, or  
7 because it represents an animal that uses habitat which  
8 would protect a wide variety of animals, is really  
9 something that the individual jurisdictions, would have  
10 to be their decision on, not something that I'm aware  
11 of.

12 Q. Okay, thank you.

13 Now, before the break we were discussing  
14 Dr. Euler's evidence that, at least in his view,  
15 population data or index counts exist for approximately  
16 45 species. And assuming that's correct, that would  
17 seem to suggest that that kind of information is  
18 available only with respect to 15 per cent of the 309  
19 species in Ontario.

20 And again, if that is the case, without  
21 population data or even index counts on the remaining  
22 85 per cent of vertebrates, how can you assure us that  
23 viable populations are in fact being maintained in this  
24 province?

25 A. I guess again, partly to qualify the



1 question as I understand it, that question related to  
2 Dr. Euler's knowledge of what has gone on at that  
3 particular time and place. I believe that there is a  
4 fair bit of knowledge about habitat requirements and I  
5 also believe that, whether there has been an index  
6 count or a full inventory of particular species, that  
7 there certainly is knowledge that the species are  
8 present and are not in the position of being endangered  
9 for a good number more than the 45 species.

10 There certainly are some fairly well  
11 documented pieces of evidence. There are certainly  
12 more than 45 species, for instance, in the Breeding  
13 Bird Atlas which is sitting over on the other side of  
14 the room there, and that represents a good deal of  
15 knowledge as to the current status of these species in  
16 the province.

17 I don't disagree with what Dr. Euler said  
18 within the context and the time at which he said it  
19 and, again, I feel that it's important that we continue  
20 to expand our amount of knowledge, but at the same time  
21 I don't think that our knowledge is so constrained that  
22 we cannot make reasonably good management decisions at  
23 this time.

24 Q. Nevertheless, I think you agreed this  
25 morning with the ESSA statement that the relationship

1           between habitat and populations is not well understood,  
2           there is some uncertainty there; is there not?

3                       A.   There is some uncertainty.  There is  
4           uncertainty, as I said this morning, in all scientific  
5           knowledge.  I don't think we ever reach the ideal of  
6           having the perfect knowledge that we can say, for  
7           instance, if I have so many hectares of this habitat I  
8           can guarantee you absolutely that there is going to be  
9           23 moose and 57 red squirrels and 6 porcupines in that  
10          specific piece of habitat.

11                      I think that we know enough about the  
12          species to say that that is a preferred type of habitat  
13          for certain species and that there is a good likelihood  
14          that if that habitat is provided these species will be  
15          present.

16                      Q.   And do you have Exhibit 416B before  
17          you, that's the Panel 10 witness statement, second  
18          part?

19                      A.   Yes, I do.

20                      Q.   Do you have page 543?

21                      A.   Yes.

22                      Q.   Can you confirm for me that  
23          halfthrough that page there is a statement that there  
24          is uncertainty with respect to the impacts of harvest  
25          on cavity nesters?

1                   A. Yes, that's correct. There is both a  
2 statement of uncertainty which, again, I don't think  
3 uncertainty is something that is either unusual or bad.  
4 It does say:

5                   "Cavity nesters (nesting species) or  
6 wildlife that feed on forest insects do  
7 not appear to have been reduced by forest  
8 management activities that reduce snags  
9 in forests."

10                  So I would imply by what is read there  
11 that although there is uncertainty the uncertainty, if  
12 anything, falls on the side of that these species are  
13 not being significantly impacted by the activities  
14 being carried on.

15                  Q. Do you have Volume 175 of the  
16 transcript?

17                  A. Yes, I do.

18                  Q. Can I ask you to turn to page 31070.  
19 Can you confirm for me that on the page Dr. Euler  
20 indicates that there is uncertainty of how timber  
21 management affects certain species such as the great  
22 gray owl and the hawk owl and bog lemmings and  
23 red-backed salamanders. Do you agree with that  
24 statement?

25                  A. Yes, I agree.

1 Q. Okay. And in other testimony Dr.  
2 Euler has indicated there is a level of uncertainty  
3 about the red-shouldered hawk even, though that is a  
4 species of concern, and he also indicated that typifies  
5 the situation with respect to other non-game species of  
6 concern.

7 It's not in that portion of the  
8 transcript. I can give you the volume reference, it's  
9 Volume 159, page 28117.

10 A. Yes. I don't have that in front of  
11 me. I do note that, again, in context of what Dr.  
12 Euler is saying that he is saying that he's uncertain  
13 about things but he feels confident - and I presume  
14 that's as a professional wildlife biologist - that  
15 research programs that are ongoing and being  
16 developed - and, again, this would include I gather the  
17 programs outlined in Exhibit 923 - that, as he, to  
18 quote, page 31065 of this Volume 175 says that:

19 "I am confident in the future as we  
20 develop our monitoring programs our  
21 research programs and so on that we will  
22 maintain viable populations of all native  
23 wildlife species."

24 Q. Well, let me ask you this then, Dr.  
25 Eedy: In light of the uncertainty that we have



1 discussed this morning, the uncertainty about impacts  
2 on particular species, the uncertainty about the  
3 relationship between population and habitat and the  
4 exclusion of 30 per cent of species from the protection  
5 afforded by moose and deer guidelines, in light of all  
6 those factors, don't those factors when considered  
7 together qualify your conclusion that viable  
8 populations of all wildlife species will be assured by  
9 featured species management in this province?

10 A. I mean, that is almost a redundant  
11 question. First off, I'll -- as I indicated earlier or  
12 actually in the summary of my testimony, there is a  
13 little bit of confusion as to whether this is 20 or 30  
14 per cent.

15 I believe that the Exhibit 433, the  
16 written document, actually indicates that this is 20  
17 per cent rather than 30 per cent, at least in  
18 relationship to the boreal forest, but assuming that it  
19 is somewhere between 20 and 30, I believe that the  
20 state of our knowledge is adequate to provide for good  
21 professional decisions on habitat management and on  
22 protection of the species in the province so that we  
23 will not be losing species.

24 And at the same time I believe that there  
25 is some uncertainty, I believe there is some

1           uncertainty in all scientific research. You will never  
2           have a scientist who will stand up and swear that he  
3           knows everything about everything and has reached an  
4           ideal in his research where he can guarantee basically  
5           an educated assumption or conclusion will occur.

6                       But I feel that we certainly have a good  
7           volume of scientific data on which to base our  
8           conclusions and our management decisions and, as I just  
9           quoted from Dr. Euler, I don't believe that in the --  
10          even assuming there is some uncertainty, that we are  
11          going to lose our populations of wildlife in Ontario  
12          because of that uncertainty.

13                      I believe that it is a scientifically  
14          valid concept that we should always be increasing our  
15          state of knowledge and we should always be looking  
16          forward and we should always be increasing with that  
17          state of knowledge our ability to manage better and  
18          better as we go, but I don't think we should stop at  
19          this time and say that we don't have enough knowledge  
20          to do any management at all. I think we do have a good  
21          state of knowledge.

22                      Q. Can I ask you to turn to page 9 of  
23          your witness statement, and I'm still on the issue of  
24          viable populations, and under the heading Provincial  
25          and Local Wildlife Population Protection we see an

1 indication that:

2 "As long as viable population pools are  
3 present we will move into successional  
4 forests as the appropriate habitat  
5 conditions appear and then move out as  
6 the succession continues and the forest  
7 matures beyond these ideal conditions."

8 And can you advise me what you mean by  
9 the term viable population pools? Can you identify  
10 what you mean in terms of density and distribution?

11 A. I think viable population, I guess,  
12 is a term which would be relevant to specific species,  
13 and different species depending on their ranges and the  
14 numbers of offspring that they produce on an annual  
15 basis and what kind of losses there are, their  
16 lifespan, et cetera would have different viable  
17 populations.

18 This is complicated by the factor that  
19 there needs to be genetic diversity to maintain a good  
20 competitive population and in fact a biogeographical  
21 principle indicates that to a certain extent the larger  
22 the population the more competitive that will be in the  
23 long run on an evolutionary basis.

24 What I mean by viable population is the  
25 population which is adequate to ensure that the species

1 is not endangered or threatened at this time, and I  
2 guess even further than that, endangered and threatened  
3 species are species that are on the verge of not having  
4 a viable population, that it rarely gets to that  
5 extent - and it has been shown with some species - that  
6 one can have a very small number of animals and with  
7 careful management and control can, again, return them  
8 to a fairly large size.

9 There is some controversy - specifically  
10 I guess a good example is the buffalo or bison -  
11 controversy which is going on right now in the west.  
12 These animals are descendent from the very few animals,  
13 there's a fairly large number and there is a great  
14 discussion as to whether they're genetically a natural  
15 or a viable herd, but they certainly have survived.

16 So I gather from that -- again, I don't  
17 want to be evasive in my answers, but I don't think one  
18 can say that a certain number of a certain species is a  
19 viable number.

20 Q. So if I asked you to pick a species  
21 of your own choosing and tell me what the viable  
22 population pool is for that species in Ontario, are you  
23 able to provide an answer?

24 A. No, I couldn't give you an exact  
25 number. As I indicated, it has been shown in cases



1 such as what is going on with cranes and what is going  
2 on with the bison that extremely small numbers with  
3 very intensive management can be brought back to a  
4 recovery situation, and I guess it depends on basically  
5 the intensity of the management.

6 I don't feel that it's good to get the  
7 species into a situation where one has to do that, and  
8 within my, I guess, definition of viability I would  
9 like to try and maintain species well above that level.

10 Q. But for furbearer species or non-game  
11 species you can't advise us what that level might be;  
12 you can't tell us what level makes that population  
13 viable at a provincial level?

14 A. Not for any individual species. I  
15 can say that if you had three members left of a species  
16 and they were distributed across Ontario that their  
17 ability to be viable would be extremely low, in fact  
18 they may never meet each other and, consequently,  
19 wouldn't have any offspring, but at the other end I  
20 don't know where that number cuts off.

21 On the other hand, I think if you have  
22 several thousand members of the species and they are  
23 distributed over a fairly wide area that they would  
24 certainly be well above the viable population level.  
25 As to exactly where that division comes, I don't think

1 anybody could tell you.

2 Q. The viable population concept or  
3 objective is a qualitative objective; is it not?

4 A. To a certain extent, yes. I think --  
5 as I said, if you have a large population you can be  
6 pretty sure they're going to be viable; if you have  
7 only two or three members you can be pretty sure they  
8 aren't going to be, but there have been species which  
9 have only had maybe a dozen members left and have been,  
10 under intensive management, brought back to a viable  
11 population.

12 But, you know, somewhere -- where the  
13 division is within that area I think is difficult to be  
14 certain about.

15 Q. Can I ask you to return to Volume 175  
16 of the transcript and turn to page 31069, and there  
17 there's an indication from Dr. Euler that in his  
18 opinion the Ministry must go beyond the viable  
19 population approach and should set quantifiable  
20 population objectives particularly for non-game  
21 species. Do you agree with that?

22 A. I agree that that's certainly a good  
23 ideal from a wildlife perspective. As I said, I don't  
24 really like to see populations brought to the number  
25 where intensive management is the only way that we will

1 ensure that they are going to remain as a species.

2 Q. And Dr. Euler also indicated that in  
3 his view the moose and deer guidelines should be  
4 supplemented by guidelines relating to snag dwellers  
5 and area sensitive species and, in fact, he offered  
6 some examples of species that he might recommend other  
7 featured species -- or other featured  
8 species/guidelines could relate to the great gray owl  
9 for the boreal forest, red-shouldered hawk for Great  
10 Lakes/St. Lawrence Forest and possibly snag dwellers  
11 such as pileated woodpecker.

12 A. Yes.

13 Q. Would you agree with those  
14 recommendations?

15 A. I think those recommendations are  
16 quite reasonable. I also feel that a lot of the  
17 information is available that could be used to form  
18 those guidelines and, in fact, some of them may be  
19 available in a draft form already.

20 And again I would state that the  
21 guidelines are only really pertinent where the species  
22 in question are proven to be at some critical aspect;  
23 consequently, I think that they should be applied on a  
24 site-specific basis, and my interpretation of the  
25 featured species approach as it is described in Exhibit

1           433 is that the mechanism is there for applying or for  
2           determining areas of concern which will protect species  
3           which are of local importance.

4                       Q.   And Dr. Euler also indicated there  
5           are discussions about the development of guidelines  
6           relating to the woodland caribou.  Would you support  
7           that initiative?

8                       A.   I mean, as I indicated earlier I  
9           think, I'd support developing guidelines for any  
10          species to be applied within areas that it's important  
11          to protect that species from a provincial population  
12          basis.

13                      I think that we are working towards these  
14          levels.  I don't necessarily think we have to have all  
15          of these things at any certain point in time, but this  
16          is all part of expanding our knowledge and we continue  
17          to do this.

18                      Q.   Now, can I ask you to turn to page 10  
19          of your witness statement.  Now, in the first full  
20          paragraph on page 10, and again during your oral  
21          testimony, you seem to take some comfort in the  
22          existence of endangered species legislation and in the  
23          ability to locally feature species of concern.

24                      And turning first to the Endangered  
25          Species Act, you indicate that protection is provided



1 under that Act for 12 species of animals and one plant.  
2 So I take it that there are no fish on that list, as  
3 you understand it?

4 A. I'm not certain. I defer that to my  
5 colleague. Are there any fish on the Endangered  
6 Species --

7 Q. Did you write this paragraph?

8 THE REPORTER: I'm sorry, Dr. Eedy, I  
9 can't hear you.

10 DR. EEDY: I'm just asking whether my  
11 colleague, who's a fisheries biologist, knows whether  
12 there are fish. I know there certainly are on the  
13 COSEWIC list, I'm not certain --

14 DR. SCHIEFER: There are fish species on  
15 the list.

16 MR. LINDGREN: Q. On the endangered  
17 species list in Ontario?

18 DR. SCHIEFER: A. Well, I'm not sure  
19 about Ontario, on COSEWIC there are.

20 Q. Well, earlier in this proceeding I  
21 believe Dr. MacLean confirmed that there are in fact no  
22 fish presently on the Ontario endangered species list.  
23 Do you have any evidence to contradict that?

24 A. No, I don't.

25 Q. Okay. And in fact there are COSEWIC

1 listed species of fish that are found within the area  
2 of the undertaking; is that correct?

3 A. That's correct.

4 Q. And they are not found on the  
5 endangered species list?

6 A. Is that a question?

7 Q. That was a question for you, Dr.  
8 Schiefer?

9 A. No, I assume they're not.

10 Q. Okay. Now, in this proceeding, Dr.  
11 Eedy, Dr. Euler agreed that there are in fact species  
12 that are not on the provincial list that are indeed  
13 rare. Do you agree with that?

14 DR. EEDY: A. I would assume, and I  
15 guess I would have to look at the actual COSEWIC list  
16 as to which category they're listed. If one includes  
17 rare, the various categories of threatened and  
18 endangered, rare and et cetera, that's true.

19 MADAM CHAIR: Well, we have that as an  
20 exhibit. Do we have it available?

21 MR. LINDGREN: Pardon me?

22 MADAM CHAIR: We have that as an exhibit.

23 MR. LINDGREN: Yes, it is an exhibit.

24 Q. Now, Dr. Eedy, can you advise me  
25 whether or not, in your opinion, there are -- well, let

1 me start this one again. The bald eagle is on the  
2 endangered species list; is it not?

3 DR. EEDY: A. I believe it is.

4 Q. And can you advise me as to whether  
5 or not there are birds that are less common than the  
6 bald eagle in this province that are not on the list?

7 A. I really couldn't advise you of that,  
8 no.

9 Q. Well, what about the red-necked grebe  
10 or the hawk owl; can you advise me as whether or not  
11 they are rarer than the bald eagle?

12 A. I don't have exact numbers or  
13 whatever immediately at my disposal at this time.

14 MR. CASSIDY: Madam Chair, just for your  
15 assistance, for your notes, that exhibit number you're  
16 referring to I believe is Exhibit 268 which is pages  
17 531 through 535 of the Exhibit 266B which was the  
18 COSEWIC status list.

19 MR. LINDGREN: Of fish.

20 MR. CASSIDY: Yes.

21 MADAM CHAIR: Thank you.

22 MR. LINDGREN: Q. Dr. Eedy, can you  
23 advise me as to whether or not the two species which I  
24 just mentioned are on the COSEWIC list?

25 DR. EEDY: A. Again, I'd have to refer

1 to the list. I haven't got it memorized.

2 Q. Assuming that there are species rarer  
3 than the species found on the endangered species list,  
4 assuming that is the case, would you agree with me that  
5 the current list does not reflect biological reality,  
6 it's not an accurate or updated list of what's rare and  
7 what's not in this province?

8 A. Again, I think that question really  
9 works in two directions because I believe there are  
10 some species on the list which have recovered to a  
11 certain extent.

12 I'm not involved in the actual  
13 legislation, but I believe that there is some  
14 difficulty in revising and even to add or subtract  
15 species, and I believe there is some debate over some  
16 of the species which are on and which are off of it.

17 So that that potential exists. I cannot  
18 say that it is -- I know that some people feel what  
19 you're saying is true and some people feel otherwise.

20 Q. And that's why I put it to you in the  
21 form of a hypothetical: If it is the case that there  
22 are in fact species that are rarer than are not on the  
23 list - if that is the case - then, you can't say that  
24 the list is biologically correct; it's a bureaucratic  
25 list, it's not a biologically correct or accurate list



1 of what is endangered in this province?

2 A. If there are species which are not on  
3 the list which are in danger from a viability  
4 perspective I believe that it would be, from a wildlife  
5 perspective, a good idea to add them to the list.

6 At the same time I can't say relative  
7 rareness because I know there are some species on the  
8 list that I believe are reasonably common.

9 Q. Well, again returning to my  
10 hypothetical: If there are in fact species rarer than  
11 the species on the list, that makes the list somewhat  
12 of a bureaucratic exercise, it's not an up to date or  
13 accurate reflection of what's out there?

14 A. Again, I guess it's a hypothetical  
15 question. I do believe that the list probably should  
16 be reviewed and modified as more information becomes  
17 available. Whether that is occurring or not, I'm not  
18 certain.

19 I know that species have been added to  
20 it. What the exact reason that this occurs within the  
21 bureaucracy of the province as to adding or subtracting  
22 a species and whether or not it's scientifically valid,  
23 I would certainly hope it is.

24 Q. Well, perhaps I'll just advise you  
25 what our concern is with respect to this issue. On

1 page 10 of your witness statement, the last line of the  
2 first full paragraph you indicate that:

3 "Such species should be given special  
4 consideration in the timber management  
5 planning process where identified."

6 And I take it you're referring to species  
7 that are on the endangered species list or that are  
8 COSEWIC listed.

9 And my point to you is that there are  
10 species that are not COSEWIC listed and that are not on  
11 the endangered species list, are they excluded --  
12 should they be excluded from protection?

13 A. No, and I don't believe -- as I again  
14 indicated earlier -- in Exhibit 433 it includes species  
15 which are locally important based on the site-specific  
16 expertise.

17 Q. So assuming, for example, that the  
18 red-necked grebe and the hawk owl are not COSEWIC  
19 listed and they are not on the endangered species list,  
20 however, if they are rare they should be given special  
21 consideration in the timber management planning  
22 process?

23 A. I think if they are rare and if they  
24 are found within a certain area, that some level of  
25 protection to ensure their continued existence in the

1 province, if necessary, should be given to them.

2 Q. Would one level of protection or one  
3 method of accomplishing that protection be listing  
4 those species?

5 A. That certainly could be a method, if  
6 it's appropriate.

7 Q. They should be identified so that we  
8 know they deserve protection under the timber  
9 management planning process?

10 A. Yes, if the scientific information  
11 indicates that they are at a stage or that they require  
12 protection.

13 Q. Now, a moment ago you referred to the  
14 ability to locally feature these species so as to  
15 protect them. Do you have a copy of Exhibit 491 before  
16 you? This is a package of interrogatories filed by  
17 Forests for Tomorrow on Panel 10.

18 A. Yes. Yes, I have that.

19 Q. And can I ask you to turn to the  
20 answer to -- actually, can I ask you to find the chart  
21 that has been prepared, I think it was in relation to  
22 Question 27(c).

23 A. 20, sorry?

24 Q. 27(c). I have a copy of the chart  
25 for you because there was some difficulty providing it

1 at the time these interrogatories were.

2 A. I'm sorry...

3 MADAM CHAIR: What does the chart -- is  
4 this the chart?

5 MR. LINDGREN: This one, that's right.

6 Q. Now, this chart seems to indicate  
7 that there have been some reserves or areas of modified  
8 operations established for some species, and we see the  
9 red-shouldered hawk, bald eagle and osprey and heron.  
10 That appears to be it.

11 Now, as a professional biologist does  
12 this general lack of locally featured non-game species  
13 cause you any concern?

14 Perhaps while you're pondering that --

15

16 DR. EEDY: A. I think -- sorry.

17 Q. I wasn't sure if you were going to  
18 answer that time or not. But Dr. Euler indicated in  
19 his evidence that there are not a lot of locally  
20 featured species, and this chart would seem to be  
21 evidence of that.

22 Does that cause you any concern?

23 A. I would -- again, I guess I would  
24 hope that as our information and research increases  
25 that perhaps we would learn more. It's a difficult



1 question, because...

2 Q. Well, at page 10 of your evidence,  
3 Dr. Eedy, you've listed 12 species under the Endangered  
4 Species Act and a number of COSEWIC listed species.  
5 Most of those do not appear to have been locally  
6 featured in this province at this point in time, and  
7 I'm asking you: Does that cause you any concern?

8 A. Well, I guess the issue in question  
9 is, you know, how many of these are covered by  
10 providing habitat or reserves for moose or other sorts  
11 of issues.

12 I think the ones that are featured  
13 specifically will have more information, things like  
14 the bald eagle are a species which require somewhat  
15 larger areas or whatever. I know -- for instance, some  
16 species which are on the endangered species list that  
17 are not listed here I know do have protection through  
18 parks or conservation areas that are set aside.

19 So again, one would have to look at which  
20 species are within the forest, what their habitat  
21 requirements are and where they are and compare it to  
22 this list to see if there are things missing that  
23 should be on it.

24 I again understand that the Ministry is  
25 making considerable effort. Again I keep referring to

1       this Exhibit 923 which I think is a fairly important  
2       statement as to the effort that the Ministry is making  
3       to fill any such gaps that could exist.

4               I certainly know of areas, for instance,  
5       where heronries are known of and have, on a  
6       site-specific, project-specific basis the Ministry has  
7       requested protection of these which are not listed on  
8       this document.

9               Again, I gather this may -- there are  
10       several things this document may indicate. It may  
11       indicate that the five-year planned harvest areas don't  
12       interfere with these species. I don't know. I guess  
13       there's a lot of -- it's difficult to make broad  
14       conclusions about a document without knowing a lot of  
15       what goes into the preparation and use of that  
16       document.

17              Q. In order to identify whether a  
18       particular species is in a particular area, I assume  
19       that one would have to undertake some sort of field  
20       work to look for the species?

21              A. I think in some cases that's true; in  
22       many cases I think the knowledge is existing as to  
23       whether a species are in an area or not.

24              Q. And that knowledge would exist in the  
25       MNR local office; would it?

1 A. In most cases, yes.

2 Q. I understand from your evidence that  
3 you have done some field inventory work in the Jackfish  
4 or Lake Nipigon area for Ontario Hydro?

5 A. Yes.

6 Q. In the course of that work, did you  
7 find any species that had not been identified by the  
8 local MNR office?

9 A. We found some specific sites for  
10 things such as bald eagle. They had -- certainly the  
11 local MNR office had a good indication that the species  
12 were in the area; they had seen the species, they  
13 hadn't always found the exact nest site, but they  
14 certainly knew and told us that they should be species  
15 which we should be aware of and paying special  
16 attention in our study process.

17 Q. And did you find any other species or  
18 locations of species that had not been identified  
19 within MNR files?

20 A. Again, this is -- I don't believe we  
21 did, no.

22 Q. Okay. Then turning very briefly to  
23 the issue of plants. Plants, I assume you would agree,  
24 are an important part of the biological makeup of the  
25 forest.

1                   A. That's correct. My evidence is more  
2 on plants as a habitat than on the species in  
3 particular, I'm not a botanist.

4                   Q. And in fact forests can be described  
5 as habitat for plant species?

6                   A. Certainly.

7                   Q. And there has been evidence in this  
8 hearing that there are in fact rare, threatened and  
9 endangered plants within the area of the undertaking,  
10 yet the Ministry does not have any specific guidelines  
11 to protect flora from the impacts of timber management  
12 and, further, the evidence has suggested that the  
13 Ministry has no intention to produce such a guidelines.

14                   Now, as a professional biologist, does  
15 that cause you any concern?

16                   A. Again, Madam Chair, I'm not an expert  
17 on plants. I have a fair bit of experience relating to  
18 to rare plants in general. This experience has tended  
19 to lead me to believe that where plants are quite often  
20 found in habitats which are unique, such things as  
21 cliffs or wetlands or in southern Ontario in the area  
22 which is an extension of the southern U.S. communities  
23 into the province, in a lot of cases it's difficult to,  
24 or almost impossible to prove that a rare plant is not  
25 found in an area if that's within its known



1 distribution.

2                   There certainly have been a lot of  
3 research on rare species, in fact there is a  
4 multi-volume atlas that summarizes all the locations of  
5 these species throughout the province and there are a  
6 lot of other documents related to these, and I guess my  
7 feeling is that in most of the areas in which timber  
8 management activities are actually taking place there  
9 is a much lower potential for rare plants to exist  
10 because these are not the unique, out-of-the way kind  
11 of habitats in which one finds these plants.

12                   If black spruce forest were the preferred  
13 habitat for some of these species, they wouldn't be  
14 rare and endangered because there is a lot of that  
15 habitat available in Ontario.

16                   Q. Dr. Eedy, in Panel 16 Dr. Euler  
17 indicated that the Ministry has undertaken no  
18 scientific studies to support the proposition that most  
19 flora species are unaffected by timber management in  
20 this province. And I take it that you'd be aware of  
21 that statement?

22                   A. Again, you know, the effects of  
23 timber management on flora was not really my area that  
24 I was concentrating my research on.

25                   Q. And I take it then that you conducted

1 no scientific studies of the impacts of timber  
2 management on plants?

3 A. On rare plants, other than the  
4 interest I was looking at was more the diversity of  
5 habitat in general rather than the exact species which  
6 are found before and after timber harvesting.

7 Q. Okay, thank you.

8 Now, if I can summarize your evidence, if  
9 I could on this part or portion of the witness  
10 statement, I take it that your position is that  
11 featured species management should be retained in this  
12 province and that the moose guidelines and deer  
13 guidelines that go along with that should be maintained  
14 but perhaps not as widely or as automatically applied  
15 as they are to this point.

16 Is that a fair summary of your evidence?

17 A. To a certain extent. I feel that the  
18 featured species management approach, as I understand  
19 it, is a good wildlife management technique at this  
20 point in time. I don't feel that this should prohibit  
21 continuing research and, if I might use the phrase,  
22 adaptive management of the approach.

23 I feel that this is something that is  
24 important to all sciences, that we don't say we've  
25 reached the ideal we're never going to change and we're

1 going to sit at this point.

2 I think it's a good technique at this  
3 point in time and I think that it provides a good level  
4 of protection for the species of wildlife in the  
5 province.

6 MADAM CHAIR: Dr. Eedy, when do you mark  
7 the -- from your evidence I've received the impression  
8 that you feel that in terms of the protection of  
9 wildlife habitat the situation is improving and is  
10 fairly acceptable in Ontario.

11 Was there a turning point in the past  
12 where you saw things change, or have you ever seen a  
13 very serious problem with respect to wildlife habitat  
14 protection?

15 DR. EEDY: I don't think that there's a  
16 clear turning point, I think that we have continued to  
17 advance our knowledge. I think that that management  
18 have become more important and the volume of knowledge  
19 that we have in order to use management has become  
20 greater and together these are steadily increasing our  
21 ability to manage to protect wildlife species.

22 As I said, I don't believe we should stop  
23 now because I don't think we've reached an absolute  
24 ideal and I don't think we ever will but I, at the same  
25 time, don't feel that we don't have adequate knowledge

1 to make good management decisions from a wildlife  
2 perspective and I feel that -- I don't feel there is  
3 any evidence that indicates that we're doing a bad job  
4 at this point in time.

5 As to whether in the past we were doing a  
6 bad job and there is a certain time that we suddenly  
7 started doing a good job, I don't think there is a  
8 point that I can point to that I would say that, no.

9 MR. LINDGREN: Q. And, Dr. Eedy, a few  
10 moments ago you referred to adaptive management and  
11 that brings me to Dean Baskerville's evidence before  
12 this Board. Now, did you review Dean Baskerville's  
13 evidence as it relates to wildlife and habitat?

14 DR. EEDY: A. Yes, I did.

15 Q. So you have read his audit?

16 A. I have read his audit.

17 Q. And his testimony before the Board  
18 and his witness statement?

19 A. Yes.

20 Q. Okay. Now then, you're in a position  
21 to confirm for me that Dean Baskerville has advocated  
22 that we move beyond what he called constraint  
23 management; is that correct?

24 A. That's correct.

25 Q. And constraint management can be



1 described as management that uses guidelines to  
2 restrict other uses or other values, such as moose  
3 guidelines to restrict timber harvest?

4 A. Sorry. I think specifically it can  
5 be looked on as applying guidelines uniformly over a  
6 wide area without any site-specific input to them.

7 Q. Well, didn't he advocate that we move  
8 away from the use of guidelines to restrict timber  
9 management? What he called for was true integrated  
10 resource management.

11 A. Yes, I think that is sort of an ideal  
12 we're progressing towards.

13 Q. And in fact he testified that we have  
14 to move quickly in terms of collecting and forecasting  
15 habitat requirements of representative species or  
16 guilds and we have to relate these to the harvest and  
17 timber schedules. Would you agree with that general  
18 proposition?

19 A. Again, I believe we have a good deal  
20 of information on habitat requirements of different  
21 species. I'm not sure how much urgency there is. I  
22 certainly think we should continue to expand that  
23 information. I don't think we are at a point where we  
24 don't have enough information to make management  
25 decisions.

1                   Q. Dean Baskerville also indicated that  
2 we need to set quantifiable habitat and population  
3 targets. Would you agree with that?

4                   A. Again, I think that certainly is a --  
5 from a wildlife perspective is a reasonable point. I  
6 don't feel that it's absolutely essential.

7                   Q. Now, in your evidence you've referred  
8 to GIS and you've referred to HSA and HSI as aids to  
9 implement featured species in this province.

10                  Now, both you and Dr. Euler have  
11 indicated that with each management system there are  
12 pros and cons. And can you advise me what, in your  
13 opinion, are the pros and cons of HSA or HSI?

14                  A. I think very definitely that the pro  
15 is that this is an approach that can be applied over a  
16 fairly wide area using a fairly extensive amount of  
17 remote data. There certainly has to be groundproofing  
18 in order to calibrate those data, but again, this is  
19 quite often a degree, as one applies the approach one  
20 can revise it if and when necessary. It doesn't mean  
21 that it's a bad approach to start with, it means that  
22 it can get better and better.

23                  I believe it provides a system in which a  
24 lot of the data which today are collected and not  
25 always shared or known by everybody involved can be

1 collected and made available much easier to a large  
2 number of people, and I guess actually in this case I'm  
3 referring more to GIS as a method of putting these data  
4 together and providing them in an easily manageable and  
5 easily manipulateable fashion. I think there is a good  
6 deal of potential for these systems in the future.

7 I guess partly on the other side these  
8 are developing systems, they hold a lot of promise, but  
9 I think it may take some time before all of that  
10 promise is proven. I think only by utilizing them and  
11 implementing them can we really prove that promise.

12 From a wildlife perspective, I feel  
13 habitat is a more easily quantifiable, more easily  
14 inventoriable and very viable way of managing for  
15 wildlife and for their populations and, as a  
16 consequence, I have a lot of hope for these systems as  
17 they develop.

18 Does that answer your question?

19 Q. Well, it does. You've indicated that  
20 the only con that you're aware of is that they're still  
21 developing, they're not proven. Are there any other  
22 shortcomings that you're aware of?

23 A. Not -- I think they have more  
24 advantages than disadvantages. I guess the shortcoming  
25 about being proven is, again, it's a relative sense; I

1 mean, we will never have absolute proof that they are  
2 absolutely accurate, but I think our ability to use  
3 them accurately will improve as time goes.

4 But the ones I have seen and the  
5 information in them, I think, is certainly reasonable  
6 from a management position and provides, in my view  
7 anyway, possibly the best approach that we have on hand  
8 right today.

9 Q. Now, at page 8 of your evidence you  
10 have indicated that HSI models - this is in the first  
11 paragraph:

12 "HSI models have been applied in several  
13 environmental management studies in  
14 Ontario with minimal modification."

15 And can you advise me for what species  
16 the HSI model has been used in those studies?

17 A. In Ontario, to my knowledge, the  
18 main -- or there has been some use with beaver, there  
19 has been use or testing of the use with moose, and  
20 there has been with some fish species, which I think  
21 maybe Dr. Schiefer, if you want a list, could provide  
22 more.

23 Q. Can you provide me with any  
24 references to these studies? Have the results been  
25 published, or --



1                   A. I'm not sure they've been published,  
2                   no.

3                   Q. Okay.

4                   A. I know there is a U.S. HSI model for  
5                   moose in the Lake Superior district which includes  
6                   Ontario and that's freely available.

7                   Q. Okay. Then my final question to you  
8                   is this: On page 9 you indicate that:

9                   "It's Beak's opinion that a combination  
10                  of the proposed GIS approach with a  
11                  habitat supply predictive model similar  
12                  to the HSI or HSA models can provide a  
13                  useful tool for management of timber  
14                  harvesting effects on wildlife habitats  
15                  and populations in the area of the  
16                  undertaking."

17                  And can you advise me for which species  
18                  should the HSI or HSA models be developed?

19                  A. I can advise you for which species  
20                  they are developed, I think that was filed in response  
21                  to an undertaking or to an interrogatory.

22                  Q. Well, my concern is this: You're not  
23                  advocating an HSA or HSI model for all 309 species?

24                  A. No, I'm not. I think, to begin with,  
25                  my feeling would be that one can couple this with

1        featured species approach and utilize models which  
2        would help one manage for featured species, then I  
3        think one would expand these really to look at other  
4        species which perhaps the MNR research that is in  
5        progress is attempting to determine, which species are  
6        covered adequately by the featured species approach.

7                    And so, you know, perhaps the logical  
8        expansion would be to species which are not adequately  
9        protected by the moose guidelines, if such exist.

10                   Q.    So you're not in a position today to  
11        advise us which game or non-game species that HSA or  
12        HSI should be developed for?

13                   A.    No, I'm not, but I believe that there  
14        are models for a large number of species which could,  
15        with some calibration and testing, cover most of the  
16        species that are of importance in Ontario.

17                   Q.    Thank you, Dr. Eedy.

18                   And, Dr. Schiefer, perhaps if I could  
19        begin with you and ask you to turn to page 12 of your  
20        evidence.

21                   Now, you have discussed the harvesting  
22        impacts on aquatic resources and in the first bullet on  
23        this page you list several effects that can be positive  
24        or negative or neutral.

25                   And in the first paragraph you refer to

1 two studies to support that proposition; the first is  
2 Rogers, 1989. Can you advise me if that was a study  
3 that was carried out in Ontario?

4 DR. SCHIEFER: A. Not without checking  
5 the reference.

6 Q. Could you check the reference?

7 A. Yes, I will.

8 Q. And you've also referred to Hartman  
9 and Brown, 1988, and I understand that was a study that  
10 dealt with coastal floodplanes; is that correct?

11 Can you advise me as to whether or not  
12 that was a study that occurred in Ontario?

13 A. I believe that one was carried out in  
14 British Columbia.

15 Q. Okay. Now, in Panel 16 Dr. MacLean  
16 spoke about some of the uncertainties that we have with  
17 respect to fisheries and timber management. And at  
18 Volume 161 - I'll have to read it to you - page 28335  
19 Dr. MacLean states the following:

20 "I think we have indicated quite clearly  
21 that we have a large number of  
22 uncertainties in the area of timber  
23 management/fisheries interactions because  
24 there has been a lack of data collection  
25 in Ontario that would allow us to relate

1 knowledge from elsewhere to the Ontario  
2 scene."

3 Would you agree with that assessment?

4 A. No, not fully.

5 Q. So you disagree with Dr. MacLean?

6 A. I disagree with the interpretation  
7 that only research on the effects of timber management  
8 on aquatic ecosystems in Ontario would provide valued  
9 information for this jurisdiction.

10 Q. Well, certainly studies from  
11 elsewhere have to be applied with a great deal of  
12 caution in this jurisdiction; do they not?

13 A. We have a very good understanding, I  
14 think, of the relationships between the number of  
15 habitat environmental variables on fish species  
16 populations in Ontario. Given that understanding, I  
17 think we have a very good basis on which to apply  
18 either directly or indirectly, as may be appropriate,  
19 studies from other jurisdictions.

20 Q. Well, Dr. MacLean has indicated  
21 there's a lack of data collection in Ontario. And  
22 stopping right there, would you agree with that?

23 A. I'm afraid it's too broad a  
24 generalization. For instance, we have a very good  
25 knowledge - let me just give you one example - of the



1 temperature, the thermal requirements of brook trout,  
2 so that any studies in any other jurisdiction which  
3 examines the effects of timber harvesting on water  
4 temperature and the response of fish to that particular  
5 perturbation, we have a basis for interpreting and  
6 applying the results of that research to Ontario, just  
7 knowing that particular physiological response of that  
8 Ontario species to that particular habitat area.

9 Q. Certainly the results or findings  
10 from those studies would not be applicable holus-bolus  
11 in Ontario; are they? I mean, there is a certain  
12 degree of caution that is required before we can say  
13 it's the same in Ontario as it is elsewhere?

14 A. We would need to make sure that the  
15 variables or the species or the conditions were  
16 comparable, yes.

17 Q. Okay, thank you.

18 A. That does not -- that does not imply  
19 that unless it's carried out in Ontario the results are  
20 inappropriate.

21 MADAM CHAIR: Are we getting ready for  
22 lunch, Mr. Lindgren?

23 MR. LINDGREN: I was looking for my  
24 lunch, Madam Chair.

25 MR. CASSIDY: Did you bring a lunch, Mr.

1 Lindgren?

2 MR. LINDGREN: I can advise I probably  
3 have 20 more minutes with this witness. Perhaps this  
4 might be an appropriate time for a break.

5 MADAM CHAIR: All right. Why don't we do  
6 that then.

7 MR. LINDGREN: Thank you, Madam Chair.

8 MADAM CHAIR: Thank you, Mr. Lindgren.

9 ---Luncheon recess taken at 12:00 p.m.

10 ---On resuming at 1:30 p.m.

11 MADAM CHAIR: Good afternoon. Please be  
12 seated.

13 Mr. Lindgren?

14 MR. LINDGREN: Thank you, Madam Chair.

15 Q. Dr. Schiefer, before the break we  
16 were looking at some of the impacts of harvest on  
17 aquatic resources, we were looking at the impacts that  
18 you've described on page 12 of your witness statement  
19 and, as I indicated earlier, the first bullet indicates  
20 certain effects have been characterized by you as being  
21 either positive, negative or neutral.

22 And looking at the very first one,  
23 increased water yield, can I ask you to turn to Volume  
24 175 of the transcript at page 31005.

25 MR. FREIDIN: What page?

1 MR. LINDGREN: 31005.

2 Q. Do you have that, page Dr. Schiefer?

3 DR. SCHIEFER: A. Yes, I do.

4 Q. Can you confirm for me that Dr. Allin  
5 has described increased water yield effects caused by  
6 timber management as negative on balance? It's  
7 towards the bottom of the page.

8 A. Yes. I understand this to relate to  
9 the fact that timber harvesting would have a similar  
10 effect as wild fire on water yield.

11 Q. And it goes on to indicate that  
12 effect is negative on balance?

13 A. He states that he would characterize  
14 those as negative on balance, yes.

15 Q. And do you agree with that  
16 assessment?

17 A. As a generalization only.

18 Q. Okay. Then if I could ask you to  
19 turn to page 31098 in the same volume, and on this page  
20 and continuing on to the next page, Dr. Allin discusses  
21 the fish habitat guidelines and he indicates that the  
22 guidelines are probably not very effective in  
23 mitigating water yield effects to any great degree.

24 MR. FREIDIN: The page again, I'm sorry?  
25 I have trouble picking up some --

1 MR. CASSIDY: It's 31098, Mr. Freidin.

2 MR. FREIDIN: It's a disability I have,  
3 I'm sorry.

4 MR. LINDGREN: Q. Do you have that, Dr.  
5 Schiefer?

6 DR. SCHIEFER: A. Yes, I do.  
7 Q. Do you agree with Dr. Allin's  
8 opinion?

9 A. I would just like a moment to read  
10 it.

11 Q. Certainly.

12 A. Okay, I have finished reading.

13 Q. Okay. And do you agree with his  
14 opinion that the fish habitat guidelines are probably  
15 not very effective in mitigating water yield impacts?

16 A. I agree that Dr. Allin appears to  
17 make the statement that existing mitigative measures  
18 probably do not reduce water yield of peak flow effects  
19 to any significant degree.

20 Q. And I'm asking if you agree with that  
21 statement?

22 A. Well, in the context in which we  
23 looked at water yield it was less -- it was less  
24 related to whether in fact the mitigative measures  
25 provided by buffer zones reduced or mitigated increased



1 water yield as much as the negative effects of  
2 increased water yield.

3 I think it was -- my understanding of  
4 some of the evidence is that one of the problems with  
5 increasing water yield is that increased water yield  
6 will also increase the incidence of erosion, and buffer  
7 zones clearly are a benefit to avoiding against  
8 erosion. So we have always focused on whether the  
9 mitigation reduces the effect, not necessarily a factor  
10 such as water yield.

11 Q. Well, I have two questions arising  
12 out of that, Dr. Schiefer. Firstly, Dr. Allin has  
13 indicated that in his opinion increased water yield  
14 effects caused in timber management are negative on  
15 balance, and you've agreed to that?

16 A. Only as a generalization.

17 Q. As generalization.

18 A. Because I do know of incidences where  
19 increased water yield is a benefit.

20 Q. And I think that's why he described  
21 it as negative on balance. In any event, he went on to  
22 indicate that the fish habitat guidelines are probably  
23 not very effective in mitigating that effect.

24 A. In mitigating increased water yield.

25 Q. That's right.

1                   A. But I'd like to make a distinction  
2                   between mitigating increased water yield and mitigating  
3                   the negative effects of increased water yield.

4                   Q. Well, I simply put the question to  
5                   you: Do you agree with Dr. Allin that the fish habitat  
6                   guidelines are probably not very effective in  
7                   mitigating water yield effects?

8                   A. Yes, if we're strictly talking water  
9                   yield.

10                  Q. Okay, thank you. Then on page 31099,  
11                  which I believe you have before you, Dr. Allin goes on  
12                  to describe an exception to that generalized statement;  
13                  that is, where the guidelines are used to create  
14                  reserves on small headwater streams because these would  
15                  prevent a large part of the watershed from being cut.

16                  Do you have that portion of the  
17                  transcript?

18                  A. Yes, I do.

19                  Q. Do you agree with that statement?

20                  A. Well, I agree with the statement to  
21                  the point that obviously the less of the watershed that  
22                  is cut the less the effect on water yield.

23                  Q. And at that location of the  
24                  transcript Dr. Allin did not place any qualifications  
25                  on that exception, except in the manner that you have,

1       you've indicated on page 14 that not all - page 14 of  
2       your evidence - you've indicated that not all headwater  
3       streams should be automatically designated as AOCs, and  
4       you indicated the only exceptions to that would be  
5       small headwater streams that provide spawning or  
6       rearing habitat for cold water fish populations  
7       downstream. And Dr. Allin didn't qualify his exception  
8       in that way; did he?

9                   A. No, he did not.

10                  Q. Okay. Now, you've also said that the  
11       fish habitat guidelines, if they are applied in a  
12       conservative manner, can unduly restrict timber  
13       harvest.

14                   Now, is it safe to say that you have  
15       presented no evidence either in your witness statement  
16       or orally to document or quantify that particular  
17       proposition?

18                  A. Which proposition is that?

19                  Q. The proposition that applying fish  
20       habitat guidelines in the manner with which they are  
21       being applied today somehow unduly restricts timber  
22       management or harvest?

23                   Do you have any personal knowledge of  
24       that occurring in the area of the undertaking?

25                  A. Well, what I've done is looked at the

1 kind of constraints which a relatively strict  
2 application of the guidelines could impose on timber  
3 harvesting activities within a typical watershed, and  
4 I've basically expressed the same kind of concerns that  
5 are expressed in the guidelines themselves. I think I  
6 can refer you to that.

7 Q. You're referring to the fish habitat  
8 guidelines?

9 A. Yes, I am. The fish habitat  
10 guidelines, Exhibit 303, page (i), the lower paragraph  
11 on the left side, this is as part of the preface to the  
12 guidelines:

13 "In some cases adherence to the  
14 guidelines may impose severe constraints  
15 on timber management; for example,  
16 restrictions on road locations near lakes  
17 and streams could prevent any timber  
18 management operations from occurring  
19 within a large area. Where no reasonable  
20 alternatives exist, exceptions to the  
21 guidelines may be considered provided  
22 it can be demonstrated that operations  
23 can be carried out so as to ensure  
24 protection of fish habitat."

25 That's one particular reference to the



1 possible occurrence of that situation. The other one  
2 related to I believe some cross-examination of Dr.  
3 Euler -- sorry. Dr. Allin, and that's on page 14858.  
4 I'm afraid I don't have a--

5 Q. A volume number?

6 A. --a volume number.

7 Q. My point, Dr. Schiefer, was simply  
8 this: You have not presented any evidence on the amount  
9 of area that might be restricted through the  
10 conservative application of the fish habitat  
11 guidelines?

12 MR. CASSIDY: Well, there was an exhibit,  
13 Madam Chair, that this witness drew which indicated  
14 that. I mean, I think Mr. Lindgren was here, that  
15 happened on Monday.

16 DR. SCHIEFER: If I could, I would like  
17 to quote from Dr. Allin's cross-examination.

18 MR. CASSIDY: It's Volume 89. I'm sorry,  
19 Madam Chair. We have determined that the reference to  
20 the page number -- corresponding to the page number  
21 that Dr. Schiefer is referring to can be found in  
22 Volume 89 of the transcript for your notes.

23 MADAM CHAIR: Thank you.

24 DR. SCHIEFER: At page 14859.

25 Page 14859, sorry 14858, the response Dr.

1 Allin gave was:

2 "This is a situation...", this is in  
3 response to a question related to the drawing that Dr.  
4 Allin provided which I believe was exhibit -- or the  
5 exhibit we showed an example of the other day.

6 MR. CASSIDY: That's Exhibit 504, Madam  
7 Chair.

8 MADAM CHAIR: Thank you.

9 DR. SCHIEFER: The response was:  
10 "This was a situation which frankly we  
11 had not foreseen as a difficulty when we  
12 developed the fisheries policy and  
13 guidelines, but again a closer look at  
14 on-the-ground situations did raise a  
15 number of these questions.

16 The beaver pond example that you  
17 just indicated is one case of that, this  
18 is another case in which, again, you have  
19 a lake greater than 10 hectares to which  
20 the fish guidelines would apply; in other  
21 words, there is a value there that we  
22 wish to protect, there is an inflowing  
23 stream that has a large degree of  
24 branching, a large number of tributaries,  
25 could be very small tributaries that flow

1 into this stream."

2 He goes on to indicate on the following

3 page:

4 "Inbetween some of these small  
5 tributaries there would just be no point,  
6 it wouldn't be feasible to operate in  
7 that manner in terms of timber  
8 harvesting.

9 So that is one example of how the  
10 headwater area could be defined. The  
11 concern has been raised that in a case  
12 like this, with a lot of very small  
13 tributaries, there could be a lot of wood  
14 that would be tied up in this reserve  
15 because you would not be able to harvest  
16 the entire area. So there is a concern  
17 there about operations and excluding  
18 operations from large areas.

19 We don't know how large a problem  
20 this is at the moment because we don't  
21 know how commonly this scenario exists on  
22 the ground. Some of our people are  
23 presently looking at maps trying to  
24 determine how frequently this would  
25 occur."

1                   MR. LINDGREN: Q. Dr. Schiefer, that is  
2                   precisely my point. You haven't presented any evidence  
3                   as to how often this occurs or how much wood is being  
4                   restricted through the conservative use of the fish  
5                   habitat guidelines?

6                   DR. SCHIEFER: A. No, but that wasn't  
7                   the point I was trying to make.

8                   Q. But that was my question, sir, and I  
9                   don't believe I have an answer yet. You haven't  
10                  presented any quantifiable data or information to this  
11                  Board as to how much wood is restricted or how much  
12                  area is restricted through the application of the fish  
13                  habitat guidelines?

14                 A. No, I've not quantified the amount  
15                 that would be lost.

16                 Q. And the concern that Dr. Allin had in  
17                 the sense that, without that kind of information we  
18                 don't know if it's a significant problem or not, that  
19                 problem has not been resolved?

20                 A. That's true. I understand from that  
21                 testimony that that's being examined at the present  
22                 time.

23                 Q. Okay, thank you. Now, returning to  
24                 your point about headwater streams, you have indicated  
25                 they shouldn't be automatically designated as AOCs.



1 And on page 14 you indicate that:

2 "In order to assess whether they should  
3 be an AOC, there are a number of  
4 factors that should be looked at."

5 And this is found at the top of page 14  
6 of your evidence, and you include such factors as soil,  
7 erodability, stream gradient, aquatic resource  
8 features, the presence of critical habitats, the  
9 presence of sediment, depositional areas downstream and  
10 the expected degree of disturbance.

11 So I take it that you're recommending  
12 that an inventory or an assessment of those parameters  
13 should be carried out?

14 A. I think what we're suggesting is that  
15 those criteria would help make a more appropriate  
16 determination of those areas concerned which would  
17 provide assistance to providing protection to aquatic  
18 resource values without unduly restricting other  
19 resource uses.

20 Q. And I think you have indicated that  
21 you don't necessarily have to be a qualified  
22 professional biologist to do it, as long as you had  
23 some training, you can look at these factors in the  
24 field; is that correct? Was that a fair summary of  
25 your evidence?

1 A. Many of them, yes.

2 Q. Which ones couldn't a qualified  
3 technician look at or assess in the field?

4 A. Well, soil erodability. Soil maps  
5 would assist in that determination, they would be  
6 available in many cases without going to the field;  
7 stream gradient is something that can be assessed in  
8 the field without being a professional hydrologist;  
9 aquatic resource features, an individual familiar with  
10 the habitat requirements of the species being protected  
11 could make that decision; presence of critical  
12 habitats, the same would apply; presence of sediment,  
13 depositional areas downstream, that could be done from  
14 aerial photographs as well as a visual reconnaissance,  
15 and the expected degree of disturbance, that could be  
16 determined by discussions with foresters.

17 Q. Where a company is responsible for  
18 drafting a timber management plan, in your opinion, who  
19 would be responsible for carrying out that kind of  
20 assessment; would it be the Crown or would it be the  
21 company or a company employee?

22 A. Well, I'm not sure I'm qualified to  
23 determine whose responsibility that would be. My main  
24 concern is that -- really on the effects and the  
25 provision of adequate protection for aquatic resources.

1       Determining who's responsible, I just don't think I'm  
2       qualified to talk to that.

3               Q.   And I take it this kind of assessment  
4       is not currently being done and that's why you're  
5       recommending that it be done?

6               A.   I believe it's done to varying  
7       degrees depending on site-specific circumstances.  In  
8       other words where particularly important aquatic  
9       resource values are at stake, additional information is  
10      taken into consideration.

11              Q.   And what documentation have you  
12      presented to this Board to illustrate that?

13              A.   That really results from my own  
14      involvements with the various projects in different  
15      districts and our interaction with the Ministry of  
16      Natural Resources personnel.

17              Q.   Okay.  And continuing on page 14,  
18      under the heading Ecosystem Protection Concept, you  
19      indicate that:

20                   "The fish guidelines are an attempt to  
21                   protect aquatic ecosystems which  
22                   support fish populations."

23                   And you go on to say that:

24                   "While the guidelines do not specifically  
25                   mention other organisms, fish protection

1 necessarily implies protection of aquatic  
2 food chains and communities of lower  
3 trophic levels areas."

4 And stopping right there and keeping that  
5 comment in mind, can I ask you to turn to Exhibit 381,  
6 the ESSA Document, turn to page 6 of that exhibit.

7 And I'm not going to re-read the entire  
8 paragraph as I did this morning, but I'm referring to  
9 the same paragraph on page 6 of the executive summary  
10 where there's an indication that the relationship  
11 between habitat and levels of different resource values  
12 is not well understood.

13 Now, that particular proposition is put  
14 to Dr. Allin. And at Volume 86, page 14539, the same  
15 question is put, or a question was put to Dr. Allin:

16 "Is it your position that the habitat  
17 population relationship is well  
18 understood with regard to fish and that  
19 protecting habitat necessarily protects  
20 the population levels which seems  
21 frankly to be contrary to what Essa was  
22 reporting here?"

23 Dr. Allin indicates:

24 "Yes, that would be contradictory; and,  
25 no, that's not what I'm saying. The



1 relationship between habitat quality and  
2 quantity and fish population numbers is  
3 not very well defined and that is  
4 indicated in the ESSA Report. The  
5 importance of that is that we are  
6 uncertain as to the amount of habitat  
7 that could be lost due to any particular  
8 cause, but let's say a timber management  
9 practice, and the effect that would have  
10 on the fish population."

11 And, Dr. Schiefer, my question to you is  
12 this: Do you agree with those statements?

13 A. Well, I find the statements to be  
14 again extremely general. I can think of circumstances,  
15 where in fact the habitat/fish population relationship  
16 is fairly well-known and a fairly accurate prediction  
17 could be made as to what the effect on population would  
18 be given a change in habitat quality and/or quantity.

19 Q. I have no doubt that exemptions or  
20 exceptions exist, but do you agree in general with the  
21 statements put forward by Dr. Allin, that the  
22 habitat/population relationship is not well understood  
23 in the fisheries context?

24 A. Well, I have a problem with agreeing  
25 with that general statement and -- like, I don't

1 disagree with some of the points Dr. Eedy made, in that  
2 those relationships will never be perfectly understood,  
3 but that doesn't mean they're not understood well  
4 enough to be in a position to effectively manage  
5 aquatic habitats and resources.

6 At one end of the spectrum those  
7 relationships can be extremely well-known; at the other  
8 end of the spectrum with species on which much less  
9 research has been done, their habitat requirements are  
10 much less defined, that statement would be valid, but  
11 it's too sweeping a generalization.

12 Q. Well, assuming that Dr. Allin and and  
13 the ESSA authors are correct, doesn't that affect one's  
14 ability to conclude that the fish habitat guidelines  
15 are effective in protecting the aquatic ecosystem?

16 A. Personally I would not make that  
17 extrapolation.

18 Q. Well, there's evidence in this  
19 hearing, Dr. Schiefer, that the effectiveness of fish  
20 habitat guidelines are in fact only now being studied,  
21 the results aren't in, and doesn't that make any  
22 conclusions about the effectiveness of fish habitat  
23 guidelines premature?

24 A. I think, as Dr. Allin's testimony and  
25 as mine have referred, when one looks at the mechanism

1 of possible impact from timber harvesting activities,  
2 the pathways for effect fall into a number of  
3 categories and those have been listed in various  
4 testimony.

5 They include things like effects on  
6 erosion, effects on water temperature, changes in  
7 instream cover, organic debris input to streams,  
8 increased nutrient discharge. This is the process of  
9 effect.

10 Now, the cause/effect relationships of  
11 changes in those kinds of habitat conditions on  
12 individual fish species, even individual life stages of  
13 fish species, is by and large well-known.

14 Whether erosion occurs because of  
15 deforestation of a stream bank or whether it occurs  
16 because someone is building a railway bridge or a Hydro  
17 electric dam, the fact sediment is entering that  
18 habitat is what's causing the effect. So that one need  
19 not necessarily have studied the effect of timber  
20 harvesting on the effects of sediment on brook trout;  
21 if one knows the sensitivity of brook trout to  
22 sediment, then the measures one puts in place to reduce  
23 sediment input is really where the management focus is.

24 And my feeling is that the guidelines  
25 with their requirement for buffer zones to reduce --

1 specifically to reduce erosion types of effects  
2 accomplish that objective.

3 Q. Well, let me direct your attention to  
4 some effects that have a great deal of uncertainty  
5 surrounding them, and on this point I'd refer you to  
6 page 215 of the ESSA Report, Exhibit 381.

7 MADAM CHAIR: Which page was that, Mr.  
8 Lindgren?

9 MR. LINDGREN: Page 215 of Exhibit 381.

10 MADAM CHAIR: Thank you.

11 MR. LINDGREN: Q. And in the second full  
12 paragraph, Dr. Schiefer, there's an indication that 12  
13 timber management effects were assessed as uncertain  
14 and these are found on Table 6, and then it goes on to  
15 indicate that:

16 "Timber management guidelines exist for  
17 seven of the effects."

18 And also indicates that:

19 "Of the five effects for which timber  
20 management guidelines do not currently  
21 exist, one is dealt with...", presumably,  
22 "by other management and regulatory  
23 policies, while current policies and  
24 guidelines do not exist for the remaining  
25 four effects: the effects of timber



1 harvest on fish via stream flow regimes,  
2 changing lake pH, phosphorus effects on  
3 fish growth and phosphorus effects on  
4 fish survival."

5 And it goes on to indicate that:

6 "In addition, much of the evidence that  
7 was used to document the significance of  
8 effects and the adequacy of the  
9 guidelines come from outside Ontario.  
10 These findings clearly point to the need  
11 to experimentally resolve these major  
12 uncertainties in Ontario."

13 And first of all, can I ask you if you  
14 agree with the conclusion on that page?

15 DR. SCHIEFER: A. Mr. Lindgren, before I  
16 respond to that question, can I refer to another part  
17 of this document that I think puts that a little better  
18 into perspective. Page 5 of the same document --

19 MR. CASSIDY: Is that in the executive  
20 summary, or...

21 DR. SCHIEFER: Yes, it is. It's in the  
22 executive summary I believe. Yes. The first complete  
23 paragraph:

24 "In all, 36 timber management effects  
25 were examined. Of these, 10 management

1 effects were assessed as not being  
2 significant. Timber management  
3 guidelines do not exist for 8 of these  
4 and do exist for 2 of them."

5 Go to the next paragraph:

6 "14 timber management effects were  
7 assessed as being significant. Timber  
8 management guidelines exist for 13 of  
9 these effects. The effects of timber  
10 management activities on the relative  
11 numbers of tourist facilities based and  
12 non-facility based hunters via changing  
13 tag allocation is not dealt with under  
14 the timber management guidelines."

15 The following paragraph:

16 "Finally, 12 timber management effects  
17 were assessed as uncertain. Timber  
18 management guidelines exist for seven of  
19 these effects and do not exist for five  
20 of these."

21 So I think the point is that, given the  
22 number of effects that were identified, guidelines  
23 consider the vast majority of effects.

24 Clearly there will always be some effects  
25 that we don't have a good information base on, and I

1 would think that with time and additional research, you  
2 know, we will continue to tighten those gaps.

3 MR. LINDGREN: Q. So I take it then you  
4 agree with the statement on page 215 that at least the  
5 effects that are listed there, the four that I've  
6 mentioned, are uncertain and no guidelines exist for  
7 them?

8 A. Yes, that is what this document says.

9 MADAM CHAIR: Dr. Schiefer, on the four  
10 effects that Mr. Lindgren has pointed to on page 215,  
11 do those relate to erosion or are they quite separate,  
12 or do they have a separate source?

13 DR. SCHIEFER: They don't relate to  
14 erosion directly, Madam Chair, but certainly an  
15 increased stream flow regime, if it's in an area with  
16 erodable banks, could result in erosion; however, I  
17 believe this effect is the direct effect of increased  
18 stream flow on fish as opposed to that indirect effect.

19 The others are not -- the others are not  
20 erosion related.

21 MADAM CHAIR: Thank you.

22 MR. LINDGREN: Q. I take it then, Dr.  
23 Schiefer, that you've conducted or reviewed no studies  
24 that occur in Ontario that relate to those four impacts  
25 and four effects? This statement is still valid; is it

1 not?

2 DR. SCHIEFER: A. The statement in the  
3 ESSA Document?

4 Q. The one on page 215 that I just put  
5 to you.

6 A. As being part of a systematic  
7 approach to identifying where additional research  
8 effort should be directed, yes, that is a valid  
9 statement.

10 Q. At page 14 of your witness statement,  
11 Dr. Schiefer, and again on the Section 2.3 Ecosystem  
12 Protection, you go on to indicate that:

13 "The usual featured fish species are  
14 generally more sensitive than lower  
15 trophic levels of aquatic ecosystems to  
16 degradation of physical habitats and  
17 water quality."

18 And you've also indicated that's a valid  
19 extension of the featured species approach to include  
20 fish species, and can you confirm for me that fish  
21 species are not currently provincially featured species  
22 in this province?

23 A. Personally I find the terminology of  
24 featured or indicator - the other term that's commonly  
25 used is target species - they are interchangeable to a



1 degree and I find that depending on who's applying them  
2 they will use the term differentially.

3 We have been and are currently involved  
4 in a number of studies that is clearly taking the  
5 approach of using indicator or featured or target  
6 species as the management methodology for assessing  
7 effects for monitoring effects.

8 I can't really speak for whether the  
9 Ministry of Natural Resources has designated --  
10 formally designated individual fish species as featured  
11 species.

12 Q. So that's not the sense of featured  
13 species that you're using here, as the Ministry uses  
14 it?

15 A. No, it's not.

16 Q. Okay. Can I ask you to turn to  
17 Exhibit 1226 which is your answer to MOE Interrogatory  
18 No. 6, and this interrogatory was posed on the same  
19 question -- or on the same statement that I have just  
20 read into the record.

21 MADAM CHAIR: Excuse me, what exhibit  
22 number is that, Mr. Lindgren?

23 MR. LINDGREN: 1226.

24 MADAM CHAIR: Thank you.

25 MR. LINDGREN: Q. Now, you have

1 indicated that there in fact may be a number of  
2 different species that may respond or indicate  
3 responses on a variety of parameters and you've  
4 indicated, for example, if you wanted to look at water  
5 temperature as the environmental factor you would  
6 selected brook trout as a featured species.

7 Now, with respect to the other water  
8 quality impacts that we see in Exhibit 1226, what other  
9 species would you propose as indicator species?

10 A. No, I don't think -- that is not the  
11 context in which this is suggested. What I'm  
12 suggesting is that if the featured species or the  
13 target species is brook trout, if that's the species of  
14 particular concern in a lake or watershed, that the  
15 possible effects of timber harvesting on that species  
16 would be, you know, through these various effect  
17 pathways.

18 And simply that if the featured  
19 species -- if the indicator species, if you like, in  
20 fact is selected in a manner that its sensitivities  
21 protect a group of species, the species guild concept,  
22 that managing for that species does not only protect  
23 that species but major ecosystem components on which  
24 that species is based, essentially the food chain below  
25 it.

1                   Q.   Aren't you now moving into the realm  
2 of indicator species as opposed to featured species as  
3 it's defined and practised by the Ministry?

4                   A.   Yes, depending on the terminology.  
5 As I said before, to me the concept of featured  
6 species, you can feature a species based on any number  
7 of criteria; those criteria can be ecological as well  
8 as economic.

9                   Clearly I'm using it here that the  
10 featured species, and perhaps it's fortunate in aquatic  
11 systems because in most cases the best indicator  
12 species is also the species of concern from a  
13 recreational or economic point of view, they tend to be  
14 at the top of aquatic food chains, so they make  
15 excellent indicators and integrators of ecosystem  
16 effects.

17                  Q.   Now, at page 15 of your witness  
18 statement in the third paragraph you indicate that the  
19 guidelines prohibit landings within AOCs. But it's  
20 true; isn't it, that not all lakes and streams are  
21 protected by AOCs? Would you agree with that?

22                  A.   My understanding that warm water  
23 lakes larger than 10 hectares are not. All of the  
24 shoreline is not necessarily protected.

25                  Q.   So you're agreeing with my statement

1       that not all lakes and streams are protected through  
2       the AOC process?

3                   A.   Generally, yes.

4                   Q.   Okay.   And in fact if the Board  
5       accepts your proposals there may be in fact fewer or  
6       smaller AOCs around lakes and streams?

7                   A.   I think the concept that we are -- to  
8       back up just a little.   I have no objection to the  
9       guidelines as to whether they are appropriate for the  
10      protection of aquatic resources, actually I think the  
11      position that we have taken quite clearly is supportive  
12      of the guidelines, and personally I feel they would be  
13      very effective in providing adequate protection; the  
14      concern is more that the provisions of the guidelines  
15      being applied on the non-site specific basis and rather  
16      rigidly.

17                   I guess I use the analogy the other  
18      morning that they become a desk study type application  
19      where you take a 1:50,000 topographic map, follow the  
20      interpretation of the guidelines as to lakes larger  
21      than 10 hectares, all tributary systems within certain  
22      criteria you draw lines around and that becomes the  
23      exercise of designating AOCs.

24                   There is a danger in doing it that way,  
25      in that you may be setting aside areas of concern in a



1 manner or based on criteria which, from a field  
2 application, don't provide or are excessive to provide  
3 the aquatic resource protection that you require.

4 Q. And that will not adversely affect  
5 the resource value that you're trying to protect, will  
6 it?

7 A. Actually that question was posed as  
8 an interrogatory and there is a response to that that I  
9 could refer to.

10 Q. Certainly. I believe you are  
11 referring to Exhibit 1227 which is the response to MOE  
12 Question No. 10.

13 A. Yes, it is.

14 Q. And in answer No. (b) you indicate  
15 that:

16 "Overprotecting a value will not result  
17 in an unacceptable environmental effect  
18 on the protected value."

19 So I take it that's your answer to my  
20 previous question?

21 A. Yeah, depending on the perspective  
22 you take in assessing overprotection. However, I think  
23 the context of this particular response is that you  
24 have overprotection when the measures you're taking  
25 provide no additional benefit to the resource value

1       you're protecting while they have negative or  
2       disbenefit to associated values.

3               So if your only concern -- in this case,  
4       if the only concern is aquatic resources then creating  
5       larger or greater number of AOCs is not going to be a  
6       problem, but you could go to the extreme then that  
7       there should be no human action or activity anywhere in  
8       a watershed. I mean, that's the logical extreme if you  
9       don't assume some concept of overprotection.

10              Q. Can you confirm for me that if you're  
11       not talking about an AOC there is no prohibition on  
12       landings, if it's not an AOC there's no prohibition in  
13       the guidelines to the establishment of a landing?

14              A. That's my understanding.

15              Q. And would you agree with me that  
16       landings in proximity to waterbodies can result in  
17       detrimental effects on that waterbody?

18              A. Depending on the site conditions,  
19       that is a possibility.

20              MADAM CHAIR: Dr. Schiefer, is it your  
21       understanding from the fishery habitat guidelines that  
22       the Ministry would intend to have those guidelines  
23       applied rigidly?

24              DR. SCHIEFER: Madam Chair, I would hope  
25       not; however, I believe the comment has been made a

1 number of times that there is a problem with having  
2 adequate staffing to necessarily apply all of these  
3 guidelines with site-specific criteria put in place.

4 So I don't think the Ministry -- I'm not  
5 trying to speak for the Ministry. I don't think that  
6 they would purposely take that approach to applying the  
7 guidelines, but I think there is a danger, given the  
8 size of the area of the undertaking, the numbers of  
9 watersheds affected and the perhaps staff limitations  
10 that would allow that kind of site-specific  
11 application.

12 MADAM CHAIR: So it's your evidence that  
13 the wording of the guidelines in effect raises a  
14 possibility that they would be applied rigidly and then  
15 some overprotection would be given to fisheries values?

16 DR. SCHIEFER: Not totally. The  
17 guidelines are very clear in recommending flexibility  
18 in application; however, some of the interpretation of  
19 the guidelines -- for instance, there is a reference  
20 which I have here that if there is no information  
21 available on slope, that in fact the most rigid  
22 condition should be applied; that is, a 90-metre  
23 buffer.

24 So if there is no information the most  
25 rigid interpretation of the guideline, the 90-metre

1 buffer, would apply.

2 MADAM CHAIR: And potentially that's  
3 overprotection of...

4 DR. SCHIEFER: Clearly for some sites  
5 that would be overprotection. So the question then is:  
6 Will the guidelines be applied with enough  
7 site-specific knowledge to tailor them to what's  
8 actually needed rather than the most conservative  
9 interpretation based on a lack of adequate information.

10 MR. MARTEL: How can you make that  
11 determination though? Even if you've got site-specific  
12 examples, how can you apply that to a lake that you  
13 haven't maybe seen or a waterbody that you have no one  
14 out looking at?

15 I mean, isn't the whole intent of that to  
16 ensure that it is safe and not to leave it open-ended  
17 that someone can go out seeing it or knowing all the  
18 information surrounding a particular lake says: Okay,  
19 go ahead, put a landing, put whatever you want.

20 How is he to do it if you don't have  
21 staff?

22 DR. SCHIEFER: Mr. Martel, I would agree,  
23 there is a need to do the site-specific application.

24 MR. MARTEL: Yes, and I don't think you  
25 can -- then the guidelines will not be abused. If you



1 do it with site-specific intentions, you can't abuse  
2 the guidelines then.

3 DR. SCHIEFER: Mr. Martel, I'm not  
4 suggesting that they will be abused, I'm suggesting --

5 MR. MARTEL: Misused then.

6 DR. SCHIEFER: Well, applied in an overly  
7 conservative manner because of an inability to do  
8 enough site-specific application.

9 MR. MARTEL: Yes. But I am having  
10 difficulty with that because if someone goes out and  
11 looks at, it then how can you overdo it?

12 How can you - I just want to try and  
13 reformulate the words you just used - but in fact that  
14 appears to be a contradiction, if you go and look at  
15 it, how can you overapply it?

16 DR. SCHIEFER: Well, I don't -- I had not  
17 seen in the guidelines where there is a stipulation  
18 that they will always be field applied. I don't think  
19 that's a condition of the guidelines.

20 MR. MARTEL: Well then -- I mean, then it  
21 comes back to the original proposition, if there is  
22 nobody there to look at it, you have to take a  
23 conservative approach. It has to be one or the other.  
24 Maybe I don't have it right, but...

25 DR. SCHIEFER: Well, I think the position

1           or the position I'm trying to make, the point is that  
2           that becomes the kind of decision that needs to be made  
3           by the Minister of Natural Resources on a  
4           district-by-district, case-by-case study and I think we  
5           tried to point out an example where there could well be  
6           a need for that type of site-specific application and  
7           the price to be paid, if it's not done, is an  
8           overconservative approach that limits timber management  
9           in relatively large areas.

10                   MR. MARTEL: You have to become  
11           overprotective if you don't go and look at it?

12                   DR. SCHIEFER: Yes.

13                   MR. MARTEL: Okay, well that's what I'm  
14           saying.

15                   MR. LINDGREN: Q. And just following up  
16           on that point, Mr. Martel, perhaps I could refer Dr.  
17           Schiefer to the bottom of page 18 of his witness  
18           statement, and there you indicate that the optimal  
19           width of a buffer zone is variable depending on  
20           different site conditions and you, therefore,  
21           recommend -- or you have recommended that certain  
22           parameters such as soil type, moisture retention and  
23           the others be looked at in order to determine the  
24           optimal buffer width.

25                   Now, can you advise me as to whether or

1 not you're recommending that this be done in every  
2 instance? Are you asking that information on all of  
3 these factors be gathered prior to the establishment of  
4 the buffer zone?

5 DR. SCHIEFER: A. No, I think the proper  
6 use of additional information would relate to  
7 situations where from an aquatic resource protection  
8 perspective we're dealing with critical habitats and/or  
9 perhaps rare and endangered species -- rare,  
10 threatened, endangered species, or from the point of  
11 view of timber harvesting.

12 Perhaps the example I've put on the board  
13 the other day where application of areas of concern  
14 with wide buffer zones without this kind of more  
15 detailed site-specific information, simply because of  
16 the configuration of the watershed, might preclude  
17 harvesting from relatively large areas.

18 I think there is a need to make sure that  
19 the single criteria of slope alone provides adequate  
20 justification for that exclusion.

21 Q. Well, I thought I understood you to  
22 say that, in your opinion, information on these  
23 additional parameters should be gathered so you do have  
24 site-specific information that would allow you to  
25 prescribe the optimal buffer zone; isn't that your

1 evidence?

2 A. Well, not necessarily in all  
3 applications. In some instances -- in relatively  
4 simple watersheds that level of detail may not be  
5 required; the more complex watersheds, the kinds of  
6 situations which the guidelines themselves point out or  
7 as I've referred to, to Dr. Allin's testimony, where a  
8 particular problem may result from that application,  
9 the example being that relatively large areas are  
10 precluded from timber harvesting, it may well be  
11 appropriate to look at whether some of these other  
12 criteria may not be important in determining  
13 appropriate buffer zone width.

14 Q. And in the more complex watersheds  
15 would it be necessary to go into the field to gather  
16 the information on these effects or these parameters?

17 A. Some of them, yes. Some of them  
18 would be available from aerial photography, remote  
19 sensing information, GIS, you know.

20 Q. But aren't we getting back then into  
21 this desktop kind of situation that you think is  
22 somehow deleterious or should be avoided? I mean,  
23 aren't you advocating that we go into the field to  
24 gather this kind of information?

25 A. Not totally, no. No, some of this



1 information is currently available and should be  
2 increasingly available as the databases continually are  
3 added to GIS systems which become available for input  
4 to these kinds of management plans.

5 Q. And assuming that we have a complex  
6 watershed and we have a lake that's greater than 10  
7 hectares, how much would it cost to do a survey and  
8 assessment of these various parameters?

9 A. Which parameters in particular?

10 Q. Well, all of them. You have  
11 indicated that all should be considered in determining  
12 appropriate buffer zone width for specific sites.

13 A. These are the parameters at the  
14 bottom of page 18?

15 Q. Correct.

16 A. Well, soil type can come on a  
17 large-scale basis from existing soil maps. There would  
18 need to be some site confirmation as to the  
19 appropriateness of those designations.

20 Moisture retention, ground vegetation,  
21 canopy cover, microtopographic relief, slope breaks,  
22 those are relatively easy to do by someone trained in  
23 field application of this type of data.

24 Q. But the question was: How much would  
25 it cost to gather that data with respect to a

1 10-hectare lake? Would Beak be in a position to do  
2 that kind of work?

3 MR. CASSIDY: Well, there's two questions  
4 there.

5 MR. LINDGREN: Q. Well, if Beak is in a  
6 position to do that kind of work, what would you  
7 charge, what does it cost?

8 DR. SCHIEFER: A. Well, it would  
9 probably require probably one to two man days.

10 Q. And in terms of cost, what would that  
11 translate into?

12 A. If a consulting professional  
13 biologist were to do it?

14 Q. Certainly.

15 A. Perhaps a thousand dollars.

16 Q. And you're talking about a 10-hectare  
17 lake?

18 A. Again, I'm assuming that a 10-hectare  
19 lake with relatively few tributaries.

20 Q. Well, what about a thousand hectare  
21 lake and a complex watershed?

22 A. A thousand hectare lake?

23 Q. Yes.

24 A. It would be proportionally--

25 Q. Larger?

1 A. --more expensive.

2 Q. Okay. And you're not in a position  
3 to advise us as to whether or not that should be a  
4 Crown or company obligation?

5 A. No. My testimony is clearly on  
6 effects, not responsibility for assessing that.

7 Q. Okay. Two final questions, Dr.  
8 Schiefer. My notes indicate that you said that the  
9 Fish Habitat Guidelines and the Code of Practice  
10 imposes clear constraints on harvest in several  
11 respects.

12 Now, we have looked at this Code of  
13 Practice in this hearing before, it's been described by  
14 Mr. Oldford as educational only, it's not enforceable  
15 or mandatory in the same fashion as the Fish Habitat  
16 Guidelines.

17 And so with that in mind, can you advise  
18 me how the Code itself imposes clear constraints on  
19 harvest or timber management activities?

20 A. Can you refer me to the page that...

21 Q. Well, I'm referring to my notes of  
22 your oral testimony where you said that the Code  
23 imposes clear constraints on harvesting in several  
24 respects.

25 And my question is: Given that the Code

1 is not enforceable and it's not mandatory, educational  
2 only, how does it impose any constraints of any  
3 fashion?

4 MR. CASSIDY: We are getting carelessly  
5 close to a legal issue here when you use the words  
6 enforceable and you use the words mandatory.

7 In that context one might argue the  
8 guidelines are not enforceable or mandatory in the  
9 sense that it isn't an offence for failing to follow  
10 them, unless it is specifically stated in some enabling  
11 legislation, and it may be with respect to one  
12 guideline or another.

13 So I want to be very careful when this  
14 witness answers the question that he's not asked to get  
15 into some legal issue on that, and it's in that context  
16 which my comment is made, Madam Chair.

17 MR. LINDGREN: I'm just merely asking Dr.  
18 Schiefer to explain his comment that the Code somehow  
19 imposes clear constraints.

20 DR. SCHIEFER: Well, Mr. Lindgren, I'm  
21 making an assumption that the guidelines are being  
22 applied.

23 MR. LINDGREN: Q. So then you weren't  
24 referring to the Code then when you say that clear  
25 constraints are imposed on harvest, you're referring



1           only to the guidelines and not to the Code?

2                       DR. SCHIEFER:   A.   I'm referring to both.

3                       Q.   Well then, my question is this:   What  
4           clear constraints exist in the Code that are  
5           enforceable or that it's mandatory for companies to  
6           comply with?

7                       A.   My response really relates to the  
8           environmental effects side of that issue, not whether  
9           there is a legal requirement to follow them.   I'm  
10          simply looking at the terms of the codes.

11                      Q.   Okay.

12                      A.   Not necessarily their application and  
13          enforcement.

14                      Q.   My final question arises out of a  
15          comment I find on page 19 of your evidence, and under  
16          Section 2.6 Management Flexibility, the second sentence  
17          indicates that:

18                      "In Beak's view, guidelines or codes of  
19                      procedures which would further limit  
20                      the flexibility of timber managers to  
21                      account for site-specific conditions  
22                      could, in some cases, lead to  
23                      inappropriate management decisions."

24                      And by inappropriate management  
25          decisions, I take it that you're referring to a

1 decision that restricts the amount of wood that can be  
2 cut?

3 A. Yes, it relates to the concept of  
4 overprotection.

5 MR. LINDGREN: Those are my questions,  
6 Madam Chair.

7 MADAM CHAIR: Thank you, Mr. Lindgren.

8 MR. LINDGREN: Subject to further  
9 questions on the undertakings that the witnesses have  
10 provided.

11 MADAM CHAIR: Are the witnesses clear on  
12 the undertakings?

13 DR. SCHIEFER: Yes.

14 MADAM CHAIR: Mr. Hanna?

15 MR. CASSIDY: Madam Chair, if I might  
16 just put something on the record. Mr. Lindgren and I  
17 just had a discussion about one of the undertakings, it  
18 was given this morning, to determine if one of the  
19 studies was an Ontario study, which I believe is the  
20 Smith study.

21 And we've resolved it. The best way to  
22 answer that is simply provide a copy of that article to  
23 Mr. Lindgren, which we will do.

24 MADAM CHAIR: Thank you, Mr. Cassidy.

25 MR. CASSIDY: And, therefore, by putting

1           this on the record, I'm asking the witness to provide  
2           me with a copy as soon as possible.

3                       MR. HANNA: I had in my notes good  
4           morning, Madam Chair, but I guess I'll say good  
5           afternoon.

6                       MADAM CHAIR: Improvising, Mr. Hanna?

7                       MR. HANNA: Yes. I'm not very good at  
8           it, but I'm doing my best here.

9                       MADAM CHAIR: Would you like us to put in  
10          front of us the exhibits you want to use. It doesn't  
11          look like you have a very big pile.

12                      MR. HANNA: I haven't got a large pile  
13          and I will probably be dealing today, given the time --  
14          I was hoping to start with Dr. Eedy but I'm improvising  
15          again and decided I'd turn to Dr. Schiefer. Dr. Eedy  
16          seemed to have a fairly heavy duty time of it this  
17          morning, so I decided to give him a rest and deal with  
18          Dr. Schiefer.

19                      MR. CASSIDY: Is this an example of  
20          management flexibility, Mr. Hanna?

21                      MR. HANNA: It's the best a non-lawyer  
22          can do, Mr. Cassidy.

23                      MR. CASSIDY: Can I just put one more  
24          thing on the record -- sorry to interrupt.

25                      MADAM CHAIR: Yes, Mr. Cassidy.

1                   MR. CASSIDY: We have just now magically  
2                   obtained a copy of the Smith article which I'm going to  
3                   have photocopied and give to Mr. Lindgren as soon as  
4                   possible.

5                   MADAM CHAIR: Is that satisfactory, Mr.  
6                   Lindgren?

7                   MR. LINDGREN: Yes, it is, Madam Chair.

8                   MADAM CHAIR: Thank you.

9                   MR. CASSIDY: The witness need not worry  
10                  about it.

11                  MR. HANNA: Madam Chair, in terms of the  
12                  exhibits that you might wish to have before you, most  
13                  of the exhibits I will be referring to are ones that  
14                  other parties have already spoken to. There are  
15                  several others that I may be referring to, probably not  
16                  today, but I will be before the cross-examination is  
17                  completed.

18                  The first is the Baskerville paper on  
19                  habitat supply analysis, or I think it's actually  
20                  called Wood Availability and whatever, it's in the  
21                  witness statement for Panel 8 of the Ministry, it  
22                  starts at page 363, I believe. I have copies here and  
23                  I am quite prepared to make those available to anyone  
24                  who needs one, rather than carry around the whole  
25                  witness statement.



1                   MR. CASSIDY: That witness statement is  
2 Exhibit 378, Madam Chair.

3                   MADAM CHAIR: Thank you.

4                   MR. HANNA: Another article that I will  
5 probably be referring to before I complete - I can't  
6 guarantee I will but I'm just listing what's a  
7 possibility I might deal with - and that is Exhibit 979  
8 which is a paper by Dr. Baskerville on Cumulative  
9 Environmental Impacts. I have also made copies of that  
10 available to the witnesses to assist them.

11                  I may be referring to Exhibit 808 which  
12 is the Ward article on forest reserves around lakes,  
13 which is from the North American Lake Management  
14 Society Newsletter called Lake Line.

15                  There is an exhibit that the OFAH  
16 introduced, it's Exhibit 812 which deals with  
17 cumulative impacts. It's a journal article from the  
18 Journal of the Soil and Water Conservation Society.

19                  I have one exhibit that I will be  
20 introducing over the course of my cross-examination. I  
21 have provided that article to the witnesses for their  
22 perusal.

23                  The one other point that I would raise  
24 while I am on that matter, I had spoken to Ms. Devaul  
25 about the fact that the other exhibit that I will be

1       referring to is Exhibit 1125 which is the Ontario  
2       Federation of Anglers & Hunters terms and conditions.  
3       Perhaps for the information of all the parties, I  
4       expect throughout my cross-examination for the  
5       remainder of this hearing to probably be referring to  
6       those and simply I would just advise people, rather  
7       than have to go through it each time, I will likely be  
8       referring to our terms and conditions periodically and  
9       suggest whenever you see my name and my appearance  
10      before the Board that that would be a useful thing to  
11      have with you.

12                   MADAM CHAIR: Thank you, Mr. Hanna. Just  
13      one question.

14                   I assume all the parties are working off  
15      a list of exhibits, that they have their own lists of  
16      exhibits. Obviously we're all working on the same  
17      numbers.

18                   MR. FREIDIN: I hope so.

19                   MADAM CHAIR: Sometimes I think that the  
20      titles are a little off. I know that our filing system  
21      can use a good update and is in the process of being  
22      overhauled, but it would be helpful to the Board if we  
23      could get from the parties an agreed list of exhibits,  
24      if there could be an exchange.

25                   I assume, Mr. Freidin, your list is

1 perfect in terms of exhibit numbers and titles and so  
2 forth. It would be helpful to the Board if we could  
3 get an agreed upon list of exhibits up to this point  
4 and then the Board will endeavor to keep that updated  
5 and we'll all be working off the same document.

6 MR. FREIDIN: Sure.

7 MADAM CHAIR: And that would help some of  
8 the parties who don't attend full time to have that in  
9 their possession.

10 MR. FREIDIN: Can we get a copy - I guess  
11 I can arrange for Ms. Devaul to get a copy of the  
12 Board's list.

13 MADAM CHAIR: Oh yes.

14 MR. FREIDIN: Okay, thank you.

15 MADAM CHAIR: But perhaps I would ask Mr.  
16 Freidin, if the other parties don't object or any of  
17 the other parties can work with Mr. Freidin to  
18 producing a full list that we will agree is...

19 MR. HANNA: I can tell you the Ontario  
20 Federation of Anglers & Hunters will put their fate in  
21 Mr. Freidin's hands and let him carry it through.

22 MADAM CHAIR: Okay, thank you.

23 MR. FREIDIN: Put it in the Ministry's  
24 hands, not mine.

25 CROSS-EXAMINATION BY MR. HANNA:

1 Q. Dr. Schiefer, I would like to start  
2 with you, if I might, this afternoon. I'm going to be  
3 progressing through your witnesses statement, basically  
4 following the structure of the witness statement and  
5 dealing first with some generic issues and then some  
6 detailed issues with the various sections. So, as I  
7 say, I'll try to go through it in the order in which it  
8 is presented.

9 Section 2.1, the message in this section  
10 seems to be that many of the impacts of timber  
11 harvesting on aquatic resources can be positive,  
12 negative or neutral, and that the nature of the impact  
13 is highly site-specific based upon the nature of the  
14 receiving waterbody and the surrounding site.

15 Is that a fair assessment of the message  
16 there?

17 DR. SCHIEFER: A. That is a fair  
18 assessment.

19 Q. Perhaps just improvising here again,  
20 as I say, I had intended to start with Dr. Eedy and I  
21 had some definitional things that I wanted to sort out.  
22 Perhaps I will just do that with you at the moment.

23 The words timber harvesting is used  
24 throughout the witness statement. I had interpreted it  
25 to means the activities of access, cutting and renewal



1 with the exception of herbicide and pesticide  
2 application which is dealt with in Section 3. Is that  
3 a fair assessment of what you mean by timber harvesting  
4 in this context, or are you just dealing strictly with  
5 cutting of trees?

6 A. No, it's in the broader context  
7 although the primary focus is on harvesting.

8 Q. Okay. I would like now to move to  
9 Section 2.2 and that's a section that deals with the  
10 AOC identification, and you indicate on page 14 - I  
11 believe Mr. Lindgren spoke to you about this - that  
12 you've come to the conclusion - at the very top of that  
13 page - it should not be necessary to include all such  
14 streams - and I believe you're talking about first  
15 order streams - in AOCs and hence need buffers.

16 Is that the message you're giving there?

17 A. That's correct.

18 Q. Now, you're not recommending,  
19 however, that all first order streams should be  
20 excluded as AOCs; are you?

21 A. That's correct.

22 Q. Now, you then go on and you list on  
23 the top of that page six factors, you have just been  
24 through those six factors.

25 Now, the OFAH, I can tell you, agrees

1 with you that these factors should be considered;  
2 however, I didn't see in your witness statement  
3 anywhere mention of specifically how you feel these  
4 factors should be incorporated in arriving at timber  
5 management prescriptions for a specific site, if I  
6 understand what I mean.

7 We've got a number of factors there. I  
8 certainly can understand why you would want to have  
9 that information for those factors. How do you see -  
10 however you get the information, whether it's from air  
11 photos or whether it's from field investigations - how  
12 do you see using that information in arriving at the  
13 timber management prescriptions for a specific area?

14 A. Well, for starters, I think it would  
15 serve a role in determining what areas could be  
16 harvested, where areas of concern, where buffers are  
17 required and where they are not.

18 Q. If I could just stop -- I don't  
19 believe you're finished, but I'll let you continue on  
20 in just a minute, I just want to make sure we're on the  
21 same wave length here.

22 What areas could be harvested, just as an  
23 example, it seems to me that is the next step. I'm  
24 trying to deal before we get to that step. I'm trying  
25 to say, how could we use this information to then make

1           that determination?

2                       I can see how we could use the  
3           information ultimately if we put it together in some  
4           reasonable way to decide that, but what is the  
5           mechanism you see putting the information together?

6                       A.   In terms of how the data is in a  
7           usable form?

8                       Q.   Okay.  Well, let's take a specific  
9           example.  You've got here soil erodability and stream  
10          gradient, aquatic resource features, let's just stop  
11          with three.  And say:  How would you define soil  
12          erodability, give me the units that you would use to  
13          define soil erodability?  How would you characterize  
14          it?

15                      A.   Well, there are a number.  Soil  
16          texture, soil grain size, moisture level, there are a  
17          number that would determine how erodable that soil is.

18                      Q.   Okay.  I want to try and keep this  
19          simple, so let's just texture, okay, let's not  
20          even deal with any of the others.  Stream gradient --  
21          well, let's just deal with texture now.

22                      Texture we could have sand, gravel, loam,  
23          clay, rock.  Those are the sort of categories you would  
24          use?

25                      A.   Yes.

1 Q. And in terms of stream gradient, you  
2 would speak to stream gradient in terms of the per cent  
3 slope of the stream bed, would that be a way that you  
4 might describe it?

5 A. That's a useful criteria.

6 Q. Okay. And aquatic resource features,  
7 whether or not there were brook trout or not present;  
8 would that be...

9 A. That would be a good example.

10 Q. Okay. So let's say we've got brook  
11 trout present, we've got half a per cent grade of a  
12 stream bank and we've got clay soils.

13 Now, how would we take that information  
14 and come to -- and then put it together to come to that  
15 conclusion whether we should harvest or not and how  
16 close we should harvest; how would that be done?

17 A. Mr. Hanna, are you referring to how  
18 it would be used as a planning exercise?

19 Q. I'm looking at the situation --  
20 perhaps I can make it even easier for you, Dr.  
21 Schiefer.

22 What I'm driving at is this: Is not one  
23 way to take these factors and put them into a  
24 predictive model to say: Here's the relationship  
25 between these various factors, here's the prediction,



1 here's a way to deal with the different components, the  
2 relationships between them, and here's what the  
3 implications are in terms of, for example, sediment  
4 load in the stream during a certain type of storm.

5 Is that one way to deal with it?

6 A. Certainly is.

7 Q. And you would say that this would be  
8 at least one responsible way to go about integrating  
9 this information as a basis to test different  
10 prescriptions for a specific piece of land?

11 A. That's correct.

12 Q. Has Beak not used these types of  
13 predictive water quality models in other environmental  
14 studies?

15 A. Yes, we have.

16 Q. You have undertaken a number of  
17 studies for Ontario Hydro over the years utilizing  
18 predictive models; is that correct?

19 A. That's correct.

20 Q. Are you familiar with the water  
21 quality models prepared on behalf of Ontario Hydro to  
22 predict water quality impacts due to site disturbance  
23 adjacent to waterbodies similar to those caused by  
24 timber management, particularly dealing with  
25 transmission lines and transmission line crossings of

1 waterbodies?

2 A. I'm familiar with a number of them,  
3 not necessarily transmission lines, but certainly  
4 related to agricultural activity, urbanization, various  
5 land uses.

6 Q. So that the technology exists to take  
7 this sort of information and to actually make an  
8 estimation of the implications of, for example,  
9 different buffer strips, different cutting patterns, et  
10 cetera, in terms of water quality?

11 A. Yes, it does.

12 Q. Now, would you agree with me that -  
13 in fact I think you already have, I just wanted to  
14 confirm that this is your position - that with these  
15 types of predictive models or even professional  
16 judgment, whatever we're dealing with, there will  
17 always be uncertainty, we'll never know everything?

18 A. That's true.

19 Q. And one of the challenges you're  
20 faced with as an environmental scientist is to try and  
21 reduce that uncertainty through your practice and  
22 through learning from other people?

23 A. That's true.

24 Q. Is this one of the concepts that you  
25 understand behind the adaptive management approach?

1                   A. Yes. Mr. Hanna, the kinds of models,  
2                   whether they are species/habitat relationship models or  
3                   land use activity/water quality type models, I mean,  
4                   these models virtually all have within them the ability  
5                   to adapt them as additional information becomes  
6                   available, the ability to verify them and test them,  
7                   and the more data you put into them, the more  
8                   experience you have with them, the better their  
9                   capability to model predict reality. It's an iterative  
10                  process.

11                  Q. So given what you're telling me then,  
12                  you would see advantage in - for instance with this  
13                  example we're dealing with with these six criteria - in  
14                  developing that type of a system by the very fact that  
15                  it would provide a basis for us to increase the  
16                  precision or reliability with which we could manage the  
17                  forest in the future?

18                  A. It would hold some potential to do  
19                  that, yes.

20                  Q. Would it hold enough potential, in  
21                  your view, as to implement such a system today? Is  
22                  that one way to address the problem that you've raised  
23                  in here in terms of deciding on the size of buffer  
24                  strips and yet deal with this overconservatism concern  
25                  that you have?

1           A. Well, I hate to be characterized as  
2           having a concern in being overconservative because I do  
3           agree with the concept that, where there is  
4           uncertainty, particularly when it comes to dealing with  
5           environmental matters, there is a validity to  
6           increasingly be conservative.

7           However, the extension of that is that by  
8           being overly conservative you obligate the need for  
9           getting additional information; in other words, you are  
10          conservative enough that you have confidence that  
11          you're not causing an effect, so there is little  
12          incentive to improve that management tool.

13          Q. Again, how do you mean by it's not an  
14          incentive in terms of improving the management tool? I  
15          didn't understand that.

16          A. Well, if you are confident that the  
17          management tool you're applying, in this case be it  
18          designation of buffer zones, is adequately conservative  
19          and there is relatively little risk in applying them, I  
20          suspect you're focus on monitoring their effects, on  
21          refining that technology and that tool might be less  
22          than if you had significant concerns that in fact this  
23          is just a first cut at it and you really need to make  
24          sure that you are at least in the ballpark.

25          Q. But isn't the thesis that I started



1 out with, one of the very first questions that I asked  
2 you - and we haven't started very long here - but was  
3 this whole business of the great variability within the  
4 area of the undertaking and the need for site-specific  
5 decisions; and, hence, the difficulty of developing a  
6 standard that would apply in terms of a buffer strip or  
7 whatever across the length and breadth of an area that  
8 size?

9 A. Yes.

10 Q. And is not one way to deal with the  
11 cause of overconservatism, where that is in fact the  
12 case, is to provide a better ability to predict what  
13 the effects might be on a site-specific basis rather  
14 than to develop a provincial standard?

15 A. Where the information is available to  
16 do that, I would agree.

17 Q. And I believe Mr. Lindgren just went  
18 through with you this list of information and you  
19 indicated much of it is currently available or, in fact  
20 depending upon the level of precision that you want,  
21 could be readily available from things like air photos;  
22 could it not?

23 A. Some of it could be, yes.

24 Q. And so it comes down to a matter of  
25 how much you want to invest to reduce your level of

1           uncertainty?

2                   A.   That's one way of expressing it, yes.

3                   Q.   And so it depends on, if we've got  
4   buffer strips that are 90 metres wide and we have a  
5   large value of timber tied up in that and the only  
6   reason we have that timber tied up was, for example, to  
7   avoid sedimentation in the stream, there might be good  
8   incentive to go in and to look at that in more detail?

9                   A.   That's correct.

10                  Q.   But the only way that could be done  
11   is if we had a formal way to deal with the  
12   site-specific conditions in a predictive way?

13                  A.   It would certainly help carry that  
14   out.

15                  Q.   And it would certainly help the  
16   public also because they would have assurance as to how  
17   those decisions would be reached and how those  
18   conclusions would be come to; is that not true?

19                  A.   Well, I can't speak for the public,  
20   but it's likely true.

21                  Q.   Well, I won't jump now to the paper  
22   that's written by one of your colleagues in your  
23   company, but I think later we'll see that he was  
24   certainly of the view that that's the case.

25                  I'd like now to move to the Code of

1 Practice which is Section 2.4 -- well, it's Section 2.4  
2 and I want to deal with the Code of Practice.

3 MADAM CHAIR: On which exhibit?

4 MR. HANNA: I'm sorry, Madam Chair. I'm  
5 still dealing with the witness statement, I'm just  
6 going through the witness statement.

7 MR. CASSIDY: That's Exhibit 1222.

8 MR. HANNA: Thanks.

9 MADAM CHAIR: Which page was that, Mr.  
10 Hanna?

11 MR. HANNA: Page 14.

12 MADAM CHAIR: Thank you.

13 MR. HANNA: Q. Now, Mr. Lindgren just  
14 spoke to you about the fact that the Code of Practice  
15 is not a mandatory requirement in the same way that the  
16 guidelines are, and you indicate in the third paragraph  
17 there that:

18 "Contour furrows and use of special  
19 equipment on sensitive sites are  
20 required."

21 Now, when you say required, I just want  
22 to know what context you're using the word required  
23 there?

24 DR. SCHIEFER: A. Required in the  
25 context that there was a provision for them in the Code

1 of Practice.

2 Q. In arriving at your conclusions, have  
3 you assumed that they would be implemented in all sites  
4 that are requiring such measures such as contour  
5 furrows - I can't say that word - furrows and special  
6 equipment?

7 A. Yes, that's a fair statement.

8 Q. Can you tell me what your definition  
9 is of a sensitive site as you use it in this context?  
10 You mention (e.g., shallow soil), and I believe in fact  
11 there was an interrogatory to this effect but it was an  
12 example, it wasn't a comprehensive definition of what  
13 is and what is not a sensitive site, and that's what  
14 I'm interested in finding out.

15 A. Can I just review what the  
16 interrogatory response to that was, please?

17 Q. Sure.

18 MR. CASSIDY: This may be off the wall,  
19 but Mr. Hanna, when you're referring to (e.g., shallow  
20 soil), that's not a type of soil, I believe that's  
21 example, shallow soil.

22 Is that what you meant on page 14?

23 MR. HANNA: I understood that to be --  
24 sensitive site would include, for example--

25 MR. CASSIDY: Okay.



1 MR. HANNA: --sites with shallow soils.

2 MR. CASSIDY: All right. Thank you.

3 When you said (e.g., shallow soil), I  
4 thought you meant a type of shallow soil.

5 MADAM CHAIR: That was off the wall, Mr.  
6 Cassidy.

7 MR. HANNA: Q. Dr. Schiefer, you're  
8 referring to the Ministry of Natural Resources  
9 Interrogatory Question No. 11?

10 DR. SCHIEFER: A. Yes, I am.

11 Now, our use of the term sensitive sites  
12 basically agrees with the concept of sensitive sites  
13 which the Code of Practice identify.

14 Q. And can you refer me -- the Code of  
15 Practice is Exhibit 434; correct?

16 A. Yes, it is.

17 Q. And where specifically are you  
18 looking in the Code of Practice? Are you looking at  
19 the fifth paragraph down on page 1?

20 A. Yes, I am.

21 Q. As you may know - I'm sure you do -  
22 much of what we're dealing with here is to be as  
23 definitive and clear as possible in what's meant and so  
24 that it can be implemented in a consistent and fair  
25 way, and I have a problem in that definition in

1 understanding, first of all, what is and what is not a  
2 riparian area; how close do you have to be to be a  
3 riparian area?

4 I'm not splitting hairs -- I guess I am  
5 splitting hairs, but it's an important hair to split, I  
6 think. I'm off the wall too.

7 ---Discussion off the record.

8 DR. SCHIEFER: Well, your point is well  
9 taken in that biologists of various specializations  
10 would define riparian areas differently, hydrologists  
11 would define riparian areas differently.

12 MR. HANNA: Q. See, what I'm interested  
13 in, you've arrived at some fairly broad and quite  
14 potentially important conclusions in your witness  
15 statement and I want to clearly understand the  
16 assumptions that you have used in arriving at those  
17 conclusions.

18 And so for me to understand it I have to  
19 understand what you mean by sensitive sites, what you  
20 mean by riparian areas, what you mean by adjacent to  
21 waterbodies, steeply sloped and prone to soil erosion  
22 and soil compaction.

23 What did you assume when you wrote the  
24 words in your witness statement that this would deal  
25 adequately with the potential adverse impacts on water

1 quality and fisheries?

2 DR. SCHIEFER: A. Is that a particular  
3 question?

4 Q. That is a question; what did you  
5 assume?

6 A. In terms of sensitive riparian areas,  
7 sensitive sites?

8 Q. Tell me the definition that you used,  
9 the operative definition you used to arrive at the  
10 conclusions that you have, particularly in Section 2.4  
11 of your witness statement?

12 A. Well, the interpretation used is that  
13 sensitive sites are those in which a particular  
14 activity could have a high risk of resulting in damage  
15 or impairment to the aquatic environment.

16 Now, it may relate to stream gradient, it  
17 may relate to slope, it may relate to soil type, it  
18 could relate to any number of considerations or  
19 combinations of those, not simply slope. And, Mr.  
20 Hanna, obviously this is going to vary on the  
21 site-by-site basis.

22 Q. But my understanding of your  
23 conclusion you've reached in Section 2.4 - and I  
24 believe there shown on page 16 - is you feel that  
25 adherence to the guidelines and Code of Practice will

1 limit the risks, mitigate the multiple effects and  
2 provide adequate protection.

3 To arrive at that conclusion -- the only  
4 way I could see to arrive at that conclusion would be  
5 to have some concept of that massive area out there  
6 we're considering, 70 per cent of the province.

7 What specifically a sensitive site would  
8 be and what specifically might take place on that  
9 sensitive site, I don't see how else you could arrive  
10 at that conclusion. Perhaps you can tell me; is there  
11 another way to arrive at that conclusion?

12 A. Sorry, I didn't catch the first part  
13 of that question.

14 Q. Okay, I'll try again. You have  
15 indicated on page 16 a number of conclusions with  
16 respect to adherence to the provisions of the  
17 guidelines and Code of Practice, conclusions you have  
18 is it will limit the risks of erosion - da,da,da,da -  
19 mitigate against multiple effects and provide adequate  
20 protection.

21 Now, I understand that you're suggesting  
22 that that will occur over the entire area of the  
23 undertaking; is that a fair assumption?

24 A. That would be the objective, yes.

25 Q. No, but this isn't an objective, this



1 is a conclusion.

2 A. It's a conclusion that those  
3 provisions applied within the constraints that occur  
4 within the Code of Practice and the guidelines for  
5 aquatic habitat management would accomplish those  
6 objectives if appropriately applied on a site-by-site  
7 basis.

8 Q. Exactly. And I'm asking you: What  
9 did you assume would be an appropriate basis, and the  
10 first step in defining what would be an appropriate  
11 basis is: What is a sensitive site?

12 What did you assume is a sensitive site  
13 and what techniques would take place on those sensitive  
14 sites? I see no other way to come to the conclusion,  
15 but if there's another way, tell me.

16 A. I think you would have a difficult  
17 time defining sensitive site that would incorporate all  
18 of the variability that exists within the area of the  
19 undertaking.

20 I mean, I would agree that the definition  
21 of sensitive riparian area, sensitive site as  
22 identified in the Code of Practice is extremely  
23 general, but I also have a problem seeing how you could  
24 expand that and be so comprehensive to cover all of the  
25 variable conditions that you would have across the

1 province.

2 Q. And would you agree that one way to  
3 deal with that is back to the theme that we just dealt  
4 with; and, that is, to define a relational model of  
5 some sort or another that takes into account the types  
6 of factors that are listed on page 1, paragraph 5 of  
7 Exhibit 434, and those that you have listed throughout  
8 your witness statement in Section 2 and use that as a  
9 basis to prescribe on a site-specific basis the  
10 appropriate timber management activities?

11 MADAM CHAIR: Mr. Hanna, what is Exhibit  
12 434?

13 MR. HANNA: I'm sorry, Madam Chair, I  
14 thought that was the Code of Practice.

15 MADAM CHAIR: All right.

16 MR. HANNA: I think it's the Code of  
17 Practice.

18 MADAM CHAIR: Thank you.

19 MR. CASSIDY: Yes.

20 DR. SCHIEFER: That's a useful tool for  
21 doing it, yes.

22 MR. HANNA: Q. Can you see dealing with  
23 this - and I realize it's a long time before you or I  
24 or many people in this room will be out in the field  
25 doing these sorts of things on a routine basis - but

1 can you see yourself out in the field, being someone  
2 shortly out of school, having a page that says: Take  
3 into account the soil erodability, stream gradient, all  
4 of those things and arriving at this conclusion without  
5 having some pretty specific direction in terms of how  
6 to measure those things and how to incorporate those  
7 factors in arriving at a decision.

8 Don't you think that would assist you  
9 greatly in trying to deal with those kind of difficult  
10 site-specific decisions that you would face on a daily  
11 basis?

12 DR. SCHIEFER: A. Well, I think whether  
13 the tool we are using is a state-of-the-art complex  
14 mathematical multi-factor model or whether it's just a  
15 systematic way of collecting key pieces of information,  
16 the sophistication, you know, can depend on the  
17 importance of the resource to be protected or the  
18 numbers of factors involved.

19 I wouldn't suggest for a moment that  
20 highly sophisticated mathematical models need to be  
21 applied for making these kinds of determinations on  
22 each watershed.

23 Q. I'm sorry if I misled you about  
24 highly sophisticated mathematical models, I didn't mean  
25 to leave you with that impression.

1                   There is things such as nomographs that  
2                   are commonly used that are not complicated  
3                   sophisticated mathematical models that are designed for  
4                   field applications that incorporate many of the factors  
5                   you have listed here; is that not right?

6                   MADAM CHAIR:   Excuse me, Mr. Hanna, what  
7                   is a nomograph?

8                   MR. HANNA:   Perhaps I'll ask Dr.  
9                   Schiefer, he was nodding his head,, he looked like he  
10                  knew.

11                  MADAM CHAIR:   Could you spell it also for  
12                  the court reporter.

13                  MR. HANNA:   Maybe I'll ask Dr. Schiefer  
14                  to do that too.  N-o-m-o-graph.

15                  Q.   Dr. Schiefer, perhaps you could, for  
16                  the benefit of Madam Chair, explain your understanding  
17                  of a nomograph?

18                  DR. SCHIEFER:  A.   I'd prefer to have  
19                  your interpretation.

20                  MR. HANNA:   Madam Chair, I'll undertake  
21                  to provide the Board with an example of a nomograph so  
22                  the Board can see it.

23                  It's usually -- it can be a two- or a  
24                  multi-dimensional relationship between different  
25                  environmental factors.  It says, if you increase the



1 slope this is the amount of erosion that will occur all  
2 other factors being equal.

3 MADAM CHAIR: So it's just a graph?

4 MR. HANNA: Yes, it's a graph. Just  
5 says, here's the relationship between two factors or  
6 multiple factors. You can have as many as you like.

7 MADAM CHAIR: That's enough of an  
8 explanation.

9 MR. CASSIDY: Just so that again we don't  
10 get into the situation of a person who's not a witness  
11 giving evidence, we could get Dr. Schiefer's  
12 understanding of whether or not that's accurate and his  
13 evidence.

14 MR. HANNA: I agree.

15 MR. CASSIDY: I understand, Mr. Martel,  
16 the frustration but, you know, there are rules of  
17 evidence that we have to adopt and --

18 MR. MARTEL: Like the bunch berry.

19 MR. CASSIDY: Well --

20 MADAM CHAIR: That's fine, Mr. Cassidy.

21 MR. HANNA: Q. Dr. Schiefer, do you  
22 agree with that description?

23 MR. CASSIDY: I'm trying to think of a  
24 simple way out of this and here's a witness who can  
25 help out.

1 MR. HANNA: Q. Do you agree with that  
2 description of a nomograph, Dr. Schiefer?

3 DR. SCHIEFER: A. That's a reasonable  
4 general description, yes.

5 MR. CASSIDY: Thank you.

6 MR. HANNA: Q. And would it not be  
7 possible to develop similar types of nomographs that  
8 could be used in a predictive way at a field  
9 application level for many of the variables that you've  
10 listed here that need to be dealt with on sensitive  
11 sites and many other of the other areas that you  
12 discussed?

13 DR. SCHIEFER: A. Yes, that type of tool  
14 could well be useful.

15 Q. And are you aware that these types of  
16 tools have been developed in other jurisdictions?

17 A. For various types of considerations,  
18 yes.

19 Q. Can we turn to --

20 MADAM CHAIR: Is this a convenient time  
21 for a break, Mr. Hanna?

22 MR. HANNA: Just in full stride there,  
23 Madam Chair, but certainly. The bunch berries are  
24 getting to me too.

25 MADAM CHAIR: Thank you.

1 ---Recess taken at 3:10 p.m.

2 ---On resuming at 3:40 p.m.

3 MADAM CHAIR: Please be seated.

4 Mr. Hanna?

5 MR. HANNA: Madam Chair, with the  
6 permission of Mr. Cassidy, I'd like to show you a  
7 nomograph. It's from Exhibit 808 which is an exhibit  
8 that was authored by Neville Ward, it was introduced I  
9 believe in Panel 14, and I'll just show this to Dr.  
10 Schiefer and the Board can look at it at some later  
11 time.

12 If This is the type of thing that he was  
13 agreeing to that a nomograph might be used?

14 DR. SCHIEFER: It is.

15 MR. HANNA: Q. And can you see that  
16 being used in the field, perhaps not these exact  
17 nomographs, but nomographs like them by field  
18 technicians in making those types of decisions to  
19 incorporate those factors you've described in your  
20 witness statement?

21 DR. SCHIEFER: A. Well, I'm quite  
22 familiar with the use of models, relatively simple  
23 models that are combinations of nomographs which would  
24 relate to key criteria that would be assessed in making  
25 decisions of possible impact, if that's the case.

1                   It's seldom one nomograph, it's usually a  
2                   combination that best relates to the key habitat  
3                   features that need to be considered.

4                   Q.   Such as the ones you've identified in  
5                   your witness statement?

6                   A.   Those would be some, yes.

7                   Q.   Dr. Schiefer, can we turn to page 15  
8                   of the witness statement and the first paragraph at the  
9                   top, the first sentence says:

10                   "Most reports of erosional impacts on the  
11                   aquatic environment as described below  
12                   are associated with obsolescent logging  
13                   practices that do not represent current  
14                   harvesting procedures in the area of the  
15                   undertaking."

16                   I was interested in knowing what reports  
17                   you're referring to here, there is no reference I see.

18                   A.   Relating to logging practices?

19                   Q.   "Most reports of erosional impacts  
20                   are...?"

21                   A.   "Most reports of erosional impacts as  
22                   described below...", I believe we have referenced some.

23                   Q.   So the Carnation Creek, for example,  
24                   is using obsolescent logging practices, in your view?

25                   A.   Well, Carnation Creek is an example



1 where different logging prescriptions were used to  
2 develop hypotheses of cause/effect relationships.

3 There are a number of such studies that  
4 have been done in various jurisdictions not unlike the  
5 studies that are being proposed by the Ministry of  
6 Natural Resources in Ontario where you would take  
7 natural watersheds, expose them to different types of  
8 timber management regimes to determine -- to test the  
9 factors of impact, the habitat criteria which would be  
10 affected, the ranges of sensitivity for various  
11 factors.

12 Q. Do we have a calibrated watershed  
13 like Carnation Creek in Ontario? Do we have results of  
14 that similar nature for Ontario or for eastern Ontario,  
15 or eastern North America?

16 A. Not that I'm aware of.

17 Q. What type of obsolescent logging  
18 practices are you referring to in this sentence that  
19 our currently or have been used in the past in Ontario?

20 A. Well, it would include -- it would  
21 include things like no allowance for buffer zones or  
22 areas of concern, the use of -- in the extreme, the use  
23 of water transport of logs, landings right on the banks  
24 of rivers or lakes, the use of heavy equipment on  
25 sensitive sites, those types of considerations.

1                   MADAM CHAIR: Excuse me, Dr. Schiefer. I  
2                   don't think there's -- we don't have any evidence  
3                   before us that the water transport of logs is a  
4                   restricted operation. You've simply, as an obsolescent  
5                   logging practice, suggested there might be some  
6                   negative effect associated with water transport of  
7                   logs?

8                   DR. SCHIEFER: No, madam Chair, I didn't  
9                   mean to imply that. It's just that there have been  
10                  test watersheds where logging transport -- water  
11                  transport of logs has been considered as a  
12                  cause/effect.

13                  MADAM CHAIR: The only evidence we have  
14                  before us with respect to that -- to this sort of  
15                  transport is that it's become increasingly rare in  
16                  Ontario. I mean, it occurs but it's a small portion of  
17                  the timber management activity.

18                  DR. SCHIEFER: Yes. It's my  
19                  understanding that is true in most jurisdictions, with  
20                  the exception of course of British Columbia.

21                  MR. HANNA: Q. I would like to now look  
22                  at the third paragraph on that page, page 15, and you  
23                  make reference there again to the Code of Practice and  
24                  the fact that it prescribes skidding along slope  
25                  contours and avoidance of repeated skid trail use.

1 Now, the Code of Practice doesn't  
2 prescribe anything, it simply suggests; is that not  
3 true?

4 DR. SCHIEFER: A. True.

5 Q. Okay. Now, I want to deal with this  
6 matter of repeated use of skid trails, and I'm looking  
7 at page 2 of Exhibit 434 and the reference to repeated  
8 use of skid trails is the fourth bullet towards the  
9 bottom of the page. Do you see that?

10 MADAM CHAIR: What page is that, Mr.  
11 Hanna?

12 MR. HANNA: Page 2 of Exhibit 434.

13 MR. HANNA: Q. Dr. Schiefer--

14 DR. SCHIEFER: A. Yes.

15 Q. --what, in your view, would  
16 constitute unacceptable repeated skid trail use?

17 A. Well, I think obviously that would  
18 depend on the site, it would depend on the slope and  
19 types of soils that were involved, but basically an  
20 amount of repeat use which would result in an erosional  
21 hazard.

22 Q. And how do you anticipate that this  
23 would be decided?

24 A. I see no option but to make that  
25 decision on a site-by-site basis, very dependent on

1 slope and soil conditions.

2 Q. At what point in the implementation  
3 process do you see these decisions being made in order  
4 to achieve the environmental protection type results  
5 that you've identified or concluded that will occur in  
6 your witness statement?

7 A. Well, I think I can only give you a  
8 general answer, Mr. Hanna, that ideally it should be at  
9 some stage in the process before a commitment to a  
10 particular harvesting plan is made.

11 Q. Now, let's say we've made that  
12 commitment and we've said we can't have repeated use of  
13 skid trails in this particular site; how would you go  
14 about deciding how often a skid trail had been  
15 repeatedly used?

16 A. How often it had been used?

17 Q. How would you go about deciding how  
18 often the trail had been used? Like, we've now said we  
19 don't want repeated use of these skid trails. We say:  
20 Okay, that's fine, that's the basis upon which we're  
21 going to implement this plan. How do we now make sure  
22 that happens, or that it doesn't happen more often than  
23 what we wish?

24 A. So is this an enforcement-type  
25 question?



1 Q. Absolutely.

2 A. I'm afraid I have a problem, you  
3 know, responding to an enforcement-type question.

4 Q. Okay. But you have an idea of the  
5 environmental problem that you're dealing with. What  
6 would you tell the technician who is going to be out  
7 there making sure that your environmental advice was  
8 carried through; what would you tell that person that  
9 is out there in the field?

10 A. Well, you would have concern for  
11 considerations such as the removal of forest floor  
12 cover and duff, the compaction and/or trenching of  
13 soils which would create a corridor for water movement.  
14 But again, this would be very site-specific depending  
15 on slope and soil type.

16 Q. Well, I understand the site-specific  
17 nature and I think I can speak on behalf of the Board  
18 that they've heard the site-specific nature of  
19 decisions more than once and that they are very aware  
20 of that, and they're faced with the difficult problem  
21 of trying to carry through their mandate in terms of  
22 environmental protection through this planning process,  
23 and that is why I think they are looking to people like  
24 you as to how would you, as an expert consultant, see  
25 ensuring that environmental protection takes place.

1                   So you're saying you'd have this  
2           technician go out and look and see if there have been  
3           certain removal of the forest floor vegetation, that's  
4           one thing you would look at; the second thing you would  
5           look at would be the compaction of the soil; the third  
6           thing you'd look at was whether there had been  
7           trenching or rutting.

8                   You see, it's this whole question of  
9           degree, how much is acceptable, how would you define  
10          how much rutting is acceptable? How would you tell  
11          that technician well how much rutting is acceptable to  
12          protect those aquatic resources that you're, as an  
13          expert and as a professional, charged with ensuring  
14          that they are taken care of?

15                   A. Yes, unfortunately many of these  
16          things come down to the point of determining what is an  
17          acceptable risk.

18                   Given the frequency in this particular  
19          example, for instance, given the frequency of a  
20          particular rainstorm event, it may occur one in every  
21          two months, one in every two years or one in every 20  
22          years. So that given the probability or the risk of a  
23          certain rainfall event, of the magnitude of the risk of  
24          a certain degree of compaction or trenching, you may or  
25          may not have substantial impact on aquatic resources.

1 Clearly there is always a problem in determining what  
2 is an acceptable and what is an unacceptable risk.

3 Q. And who do you think should be  
4 charged with making such a decision and what  
5 qualifications should they require? Who should decide  
6 how much risk the environment should be put to?

7 A. Well again, I think I can only give  
8 you a very general answer. I think those charged with  
9 the responsibility for managing natural resources, in-  
10 particular aquatic resources should be required --

11 Q. The Ministry?

12 A. But as to what particular process or  
13 what particular mechanism, I really think that falls  
14 more into the planning and/or enforcement side of these  
15 issues.

16 Q. And arriving at your conclusions in  
17 your witness statement you've assumed that through some  
18 process that you haven't figured out that these things  
19 will be responsibly carried out?

20 A. Well, I think there are different  
21 steps and requirements in the process. I think a  
22 professional biologist, an aquatic specialist, for  
23 instance, can determine what some of the important  
24 habitat considerations maybe are, the particular  
25 factors that need to be considered, the range of those

1       considerations; for instance, the level of acceptable  
2       turbidity or temperature ranges, and the sensitivity of  
3       that species or those resources to changes within those  
4       ranges.

5                   The best means of accomplishing that  
6       within the planning enforcing framework I think really  
7       falls within the specialization of others.

8                   Q.   I understand, I just want to make  
9       sure that when the Board interprets the conclusions  
10      that are contained in your witness statement they have  
11      a clear understanding of the assumptions that you have  
12      made in arriving at those conclusions.

13                   And I understand one of the underlying  
14      assumptions is you see that these things need to be  
15      taken into consideration and you've assumed they'd be  
16      done responsibly and on that basis you've come to the  
17      conclusions that you show, for example, on page 16,  
18      that you limit the risks, mitigate the multiple effects  
19      provide adequate protection without having gone through  
20      how that will actually be implemented.

21                   A.   True.   I would like to think that you  
22      don't have to serve the enforcement role to have any  
23      level of assurance that the objective is carried out.

24                   Q.   Okay.   That's exactly where I'm  
25      coming to, just what you've just said and; that is, the



1 objective is carried out.

2 Would you see an alternate way to deal  
3 with this concern, and particularly not just this  
4 concern but let's just use this example, would be to  
5 establish limits in terms of the maximum variation of  
6 key water quality parameters from background levels and  
7 then to allow the forest manager or the operator to  
8 utilize those measures he deems appropriate to avoid  
9 exceeding the specified limits or variation around the  
10 limits?

11 A. Well, clearly that is an alternative,  
12 that is a means to accomplishing an objective but,  
13 again, I think to some degree it falls within the area  
14 of the planning criteria, the planning methodology.

15 Q. I understand that, Dr. Schiefer, but  
16 I think you're underestimating yourself. You've had a  
17 number of years in the environmental control business,  
18 you're very familiar with environmental policies  
19 dealing with environmental pollution, it's not as if  
20 you're new on the block in terms of these sort of  
21 things, you've been through it.

22 Is that not a fairly standard approach  
23 that has been used in many other cases that you're  
24 familiar with?

25 MR. CASSIDY: Dr. Schiefer was qualified

1 as a witness in aquatic ecology with particular  
2 expertise in fisheries biology impact assessment, not  
3 in management planning, therefore, he's outside his  
4 area of expertise and that is why he's having the  
5 difficulty he is having with these questions.

6 And I can advise the Board that I would  
7 not want this Board to take the OFIA/OLMA planning  
8 evidence from this witness. I do want them to take it  
9 from the next panel, which I invite Mr. Hanna to deal  
10 with these questions on.

11 MR. HANNA: I'll will definitely accept  
12 your invitation, Mr. Cassidy, but again, I believe that  
13 the witness -- one only needs to go through his list of  
14 publications, reports he's been involved in, they speak  
15 for themselves.

16 Q. Well, I'll ask the witness himself.  
17 Dr. Schiefer, have you been involved in studies  
18 relating to the impacts of effluents on aquatic systems  
19 and monitoring effluents and dealing with environmental  
20 policies relating to effluents?

21 DR. SCHIEFER: A. Yes, I have.

22 MR. HANNA: That was the point of my  
23 question, it was not to ask how you should do wood  
24 supply analysis or any of the other aspects of timber  
25 management planning, but how we might deal with

1 effluent problems associated with those practices.

2 And I think, Madam Chair, this witness  
3 does have the qualifications and I'm certainly  
4 interested in his views.

5 DR. SCHIEFER: However, Mr. Hanna, I  
6 would like to add that while I have done that type of  
7 analysis and those types of studies for quite a number  
8 of land use practices or activities, I do have a  
9 problem putting their application into the context of  
10 timber management activities because I haven't had the  
11 opportunity to familiarize myself in that context.

12 MR. HANNA: Q. You do have experience,  
13 however, in the whole matter of non-point source  
14 pollution; is that fair to say, you've had some  
15 experience in that field?

16 DR. SCHIEFER: A. That's correct.

17 Q. And is not the type of thing we're  
18 talking about a classic example of non-point source  
19 pollution?

20 A. As a large area, land-based activity,  
21 certainly fits that definition.

22 Q. Dr. Schiefer, excuse me, I've  
23 retrenched -- excuse me, Madam Chair, I have always  
24 called Dr. Schiefer Dr. Shaver, so I've apologized to  
25 him if I go back on it.

1                   Excuse me, Dr. Schiefer. You are  
2 familiar with the --

3                   MR. FREIDIN: Is it Shaver or --

4                   MADAM CHAIR: Have you been pronouncing  
5 your witness' name incorrectly, Mr. Cassidy?

6                   MR. CASSIDY: Maybe I can ask the witness  
7 that.

8                   DR. SCHIEFER: The pronunciation is  
9 Schiefer, but so many use the other that I'm not  
10 offended.

11                  MR. HANNA: I've said it to him for more  
12 than 15 years and he's never told me before, so...

13                  MR. CASSIDY: I don't feel bad now, I've  
14 only known him about six months.

15                  MR. HANNA: Q. Dr. Schiefer, you're  
16 familiar with the adaptive management concept as set  
17 out by Dr. Baskerville and others?

18                  DR. SCHIEFER: A. Yes, I am.

19                  Q. I would like you to look at the OFAH  
20 terms and conditions page 19, I believe it's Exhibit  
21 1125.

22                  Those terms and conditions deal with  
23 adaptive management and I'd like to ask you with  
24 respect to this particular example that we were just  
25 talking about if it would not --



1 MR. MARTEL: Would you wait for a moment.

2 MADAM CHAIR: Excuse me Mr. Hanna, that  
3 was Exhibit 1125?

4 MR. HANNA: Madam Chair, Ms. Devaul said  
5 you might not have a copy and I have made an extra copy  
6 of the page that I'm referring to, so if you wish I  
7 will provide you with that.

8 MADAM CHAIR: Thank you.

9 MR. MARTEL: That would be helpful.

10 MR. HANNA: (handed)

11 Madam Chair, I apologize for the notes on  
12 it, those are my revisions for our final version and I  
13 haven't had a chance ---

14 MADAM CHAIR: Maybe Mr. Cassidy wants a  
15 copy after all.

16 MR. HANNA: Those are from the  
17 negotiation session, so they're off the record.  
18 ---Discussion off the record

19 MS. SEABORN: This doesn't need to be  
20 made an exhibit.

21 MR. HANNA: No, no, no. This is an aid  
22 for people.

23 Q. Now, Dr. Schiefer, I would like to  
24 look at particularly condition 104 and the seven steps  
25 set out there. Perhaps I'll just give you a moment to

1 read it and then I'm going to ask you how that might be  
2 applied in the context that I was just talking to in  
3 terms of the Code of Practice?

4 Okay. First of all, does that accord  
5 with your general understanding of adaptive management?

6 DR. SCHIEFER: A. Yes, in a general way.

7 Q. Now, I'd like to go through these  
8 steps step-by-step and see how that might apply in  
9 dealing with this problem deciding in terms of the  
10 width of buffer strips and dealing with the  
11 site-specific nature of the problems that we've been  
12 discussing.

13 First of all, you had indicated that one  
14 role that you could see as a professional would be to  
15 establish factors and ranges of factors that should be  
16 considered, acceptable levels, and sensitivity of the  
17 resource to changes; correct?

18 A. That's correct.

19 Q. So one of the things that you see as  
20 one way for you as an expert to - how should I say -  
21 transmit that knowledge to people in the field would be  
22 to say: Here's an acceptable level and the variation  
23 around that level that you should work towards?

24 A. That is correct.

25 Q. And that would be the same as step

1 one, which is to set measurable quantified objectives,  
2 in this case it would be objectives in terms of  
3 specific water quality parameter; correct?

4 A. Yes, that would be correct.

5 Q. And let's take a specific example,  
6 because I think it might be easier to follow. Let's  
7 say we're dealing with brook trout and we know that  
8 brook trout, the maximum survival temperature for brook  
9 trout is 22 degrees centigrade, something in that  
10 order?

11 A. In that order, yes.

12 Q. So we say: Okay, we want to maintain  
13 brook trout in this stream and so our objective is not  
14 to let the water temperature exceed 22 degrees C for  
15 more than 12 hours in the stream or something like  
16 that. Would that be the kind of objective you could  
17 see setting to maintain that valued resource?

18 A. Yes.

19 Q. Now, the next step would be then to  
20 say: Okay, what's the relationship between the  
21 activity and the environmental variable that we want to  
22 maintain; correct?

23 A. Yes, you would need to know a  
24 cause/effect relationship.

25 Q. All right. And that could be quite

1 simple in the terms of temperature, you could simply  
2 say the amount of area exposed to sunlight, in fact  
3 there are models, nomographs that specifically do that;  
4 are there not?

5 A. There are.

6 Q. So that could be our explicit  
7 cause/effect description, nothing more than simply a  
8 map saying: Here's the maximum area of exposure of the  
9 stream at a certain point; it would be a graph.

10 A. Mm-hmm, yes.

11 Q. You could then look at various  
12 alternatives in terms of different buffer zone widths,  
13 where streams are being crossed by roads, whatever  
14 other activities that we anticipate might change the  
15 shading of the stream, and on that basis evaluate the  
16 potential effects and choose the one that was most  
17 appropriate. Do you agree?

18 A. That's correct. It's my  
19 understanding that's one of the criteria that were used  
20 in determining the habitat management guidelines.

21 Q. You could then implement those timber  
22 management activities. We'd say here's the plan and  
23 provide that, basically like a blueprint for a  
24 building, go out and do it, whether it's a skidder  
25 operator, whether it's the foreman or the forest



1 manager, whoever is going to implement it, here's what  
2 we want to do and he could do it.

3 MR. CASSIDY: Well, I object to that  
4 question. That is a clear planning question.

5 MR. HANNA: Fine.

6 MR. CASSIDY: Just a second. He's being  
7 find to expostulate or provide an opinion in an area  
8 that he's clearly not an expert in. That to me  
9 constitutes a waste of the Board's time because you're  
10 interested in getting the best evidence and he's  
11 already disavowed planning knowledge.

12 And for that reason, I suggest that Mr.  
13 Hanna be asked to move on.

14 MR. HANNA: I'll certainly retract that  
15 question, Madam Chair.

16 Q. Okay. So somehow or another those  
17 activities get implemented and that's outside of your  
18 sphere of expertise, and I accept that, Dr. Schiefer.  
19 But it is within your sphere of expertise to do  
20 environmental monitoring; is it not?

21 DR. SCHIEFER: A. Yes, it is.

22 Q. And you as an expert in that field  
23 could say to the forest technician or whoever it is  
24 that you decide is qualified to do the necessary  
25 monitoring: Here's a temperature probe, you go out in

1 the field, here's where I want you to monitor the  
2 temperature and here's the frequency I want you to  
3 monitor the temperature. And that's a fairly simple  
4 task; is it not?

5 A. That would relate to a study design  
6 designed to provide adequate information to assess that  
7 variable.

8 Q. Right. And we could then look at how  
9 the water temperature changed relative to what we  
10 expected it was going to change with our nomograph  
11 whether it's provincial, regional, local or whatever  
12 and decide how close we were; correct?

13 A. That's correct.

14 Q. Now, on that basis we could improve  
15 our understanding, we could modify the nomograph if we  
16 felt that it was not sufficiently precise, if we felt  
17 there was a systematic variation that we're seeing in  
18 terms of our monitoring results, vary the nomograph  
19 accordingly; would you agree?

20 A. I would agree, but Mr. Hanna there is  
21 nothing unique about this approach.

22 Q. Absolutely, I agree.

23 A. It's standardized methodology.

24 Q. I don't disagree with you at all  
25 there, fortunately or unfortunately it's got a nice

1 label now called adaptive management, some people knew  
2 it as a scientific method, but whatever you call, it's  
3 a legitimate and reasonable approach?

4 A. It's a systematic approach to  
5 assessing the range of a variable related to a certain  
6 activity.

7 Q. And that is the kind of information  
8 that we need in order to improve the planning from an  
9 environmental point of view in terms of providing not  
10 overprotection but the right protection?

11 A. Well, if you'll bear with me, I don't  
12 have problem in discussing this with relationship to  
13 the aquatic effects side of it; I do have a problem  
14 putting into perspective because my involvement in  
15 these hearings is rather limited and I haven't had the  
16 opportunity to determine whether in fact that  
17 particular methodology is appropriate or consistent  
18 with the planning process related to timber management.

19 Q. I appreciate that, Dr. Schiefer, and  
20 I can assure you, you aren't the only witness that  
21 faces that challenge.

22 The difficulty I have, however, is I have  
23 a report here, a witness statement, and I've asked you  
24 questions about the specifics: What is a sensitive  
25 site, how much use of the trail is acceptable -- from

1 an environmental point of view, from the area of  
2 expertise that you come from, and I haven't been able  
3 to get those clear definitions, and I can tell you, I'm  
4 not surprised, it's a very difficult thing to do deal  
5 with, and I'm trying to look and see if there's a way  
6 that the expertise that you can offer can be  
7 implemented without jeopardizing the forest  
8 environment. That's where I'm coming from.

9 And I while you may not understand the  
10 planning process and all the things that go on, you  
11 certainly understand environmental relationships in  
12 terms of the aquatic system, and I'm asking you as an  
13 expert is that a reasonable way to deal with the  
14 site-specific issues that you've raised, to deal with  
15 the problem of defining all of the variables that you  
16 have repeatedly said make it such a difficult problem?

17 A. Okay. In terms of generating the  
18 quantity and quality of information required to input  
19 those kind of decisions it is; whether it provides the  
20 type of information required to be useful within the  
21 context of planning timber management operations on the  
22 whole, I really can't comment on.

23 Q. I wasn't going to have any questions  
24 for Mr. Craig, but I know he can answer this question  
25 and so I'll make sure he's still there.



1                   Mr. Craig, is Beak involved with the MISA  
2 Program of the Ministry of Environment?

3                   MR. CRAIG: A. In some ways, yes.

4                   Q. Such as undertaking and monitoring  
5 for industrial clients?

6                   A. Well, we are conducting tests on  
7 effluent quality, yes.

8                   Q. With that particular program is  
9 Industry -- and we have a number of different  
10 industrial sectors that are falling under the MISA  
11 Program; correct?

12                  A. Yes, that's correct.

13                  Q. With that particular program, is  
14 Industry faced with spending, I think the estimates are  
15 in the hundreds of millions of dollars, in order to  
16 monitor their effluent and to report to the government  
17 their level of performance?

18                  A. Well, I don't know how much they're  
19 spending in total and I'm not sure what you mean by  
20 Industry, whether you mean an individual corporation  
21 mill site - I don't want to be vague about this,  
22 they're spending a lot of money. Just how much, I  
23 don't know.

24                  Q. You're not familiar with the  
25 estimates made by the Ministry of the Environment in

1 terms of the cost of the program to different  
2 industrial sectors?

3 A. I have seen some numbers, but I also  
4 realize that some of those estimates were made early on  
5 before costing quotes were in and I think they now  
6 differ.

7 Q. But certainly we're talking millions  
8 of dollars?

9 A. Certainly considering a lot of money,  
10 and millions of dollars is a lot of money.

11 Q. Can the results reported through the  
12 MISA Program and routine monitoring be used as a basis  
13 to prosecute those industries in the case where they  
14 exceed provincial water quality standards or the limits  
15 in their certificates of approval?

16 MR. CASSIDY: How is that relevant at  
17 all?

18 MS. SEABORN: Madam Chair, I have no idea  
19 how that's relevant, considering that it involves my  
20 client and I'm not aware of the particulars of the MISA  
21 Program. I certainly object to that question, unless  
22 Mr. Hanna can tell us exactly what relevance it has to  
23 this evidence. I object to the question.

24 MR. CASSIDY: I totally agree with M.s  
25 Seaborn.

1                   MR. HANNA: Yes, I can understand, in  
2 fact I had somewhat anticipated the objection.

3                   I'm going to refer to page 16 of the OFAH  
4 terms and conditions and those conditions deal with  
5 compliance monitoring and, in particular, I'll be  
6 looking at the conditions 86 to 89.

7                   The reason that this line of questioning  
8 is relevant is that by way of analogy there is a  
9 precedent set in this province, and indeed I would say  
10 in environmental monitoring, certainly I can say  
11 throughout North America, that the onus in terms of  
12 monitoring environmental performance rests with the  
13 party undertaking the activity: for example, the pulp  
14 mill is responsible for monitoring its effluents.

15                  And the reason I'm raising this question  
16 at this point is I've just been through with Dr.  
17 Schiefer the adaptive management approach, talked  
18 about -- talked with him about the type of data that  
19 might be collected, whether or not it falls within the  
20 planning process or not, and I intend to ask if a  
21 similar type of information were expected with timber  
22 management operations, would that be consistent with  
23 environmental policy as it's set out in the province at  
24 the present time in terms of responsibility for  
25 monitoring effluent and water quality.

1                   MADAM CHAIR: Well, I don't follow that,  
2                   Mr. Hanna. I'm getting so confused I had to go look at  
3                   the title of this witness panel again.

4                   I don't see what compliance has to do  
5                   with effects on wildlife and aquatic resources.

6                   MR. HANNA: Madam Chair, we have -- well,  
7                   at least I have spoken with the witness about this  
8                   matter, what underlying assumptions he sees in arriving  
9                   at these conclusions on page 16 in terms of the level  
10                  of environmental protection that the guidelines and  
11                  Code of Practice would provide, and I believe --  
12                  certainly from the answers that I received, I certainly  
13                  didn't get a clear sense of specifically what he's  
14                  assuming in terms of repeated use of skid trails or  
15                  contour furrows or sensitive sites or any of the other  
16                  variables that we've talked about, and what I've just  
17                  put to the witness is an alternate, in my view, an  
18                  alternate procedure.

19                  MADAM CHAIR: An alternate to what?

20                  MR. HANNA: An alternate to -- excuse me,  
21                  I will say a way to implement the concern that's raised  
22                  in terms of the overconservatism of the buffer zones.

23                  He's said we've got a problem, so you  
24                  shouldn't take all the first order streams, some cases  
25                  that may cut out much more timber than is necessary -



1 cut out is perhaps the wrong term - it will eliminate  
2 great masses or volumes of timber that won't be  
3 available for cutting, and that we should look  
4 carefully at the width of these buffer zones in certain  
5 circumstances.

6 And then I have asked him: Well, how do  
7 you propose doing that, how do you propose deciding on  
8 what should be an appropriate buffer zone width.

9 And that's why I went through with him  
10 what is a sensitive site, what's repeated use of skid  
11 trails, et cetera. There isn't a clear definition of  
12 that, he's told us that it's very site-specific, it's  
13 very hard to tell you exactly how to deal with that.

14 So I've said to him: Well, is there  
15 another way you can deal with it, and I've proposed to  
16 him setting specific objectives in terms of the key  
17 aquatic resource features that he's concerned with as a  
18 professional aquatic scientist, and then monitoring,  
19 seeing how we do and moving forward on that basis.

20 Now, the question becomes one: Is that a  
21 reasonable expectation? This witness, in fact the  
22 company that these witnesses represent are well known  
23 in the environmental field in terms of industrial  
24 effluent monitoring, and I'm simply asking them: Is  
25 that consistent with their understanding of the

1 responsibility -- the environmental responsibility  
2 that's placed on discharges?

3 MADAM CHAIR: Let me just ask Dr.  
4 Schiefer one question and; that is: Within your terms  
5 of reference, were you in any way asked to look at  
6 alternatives to the guidelines and the Code of  
7 Practice?

8 DR. SCHIEFER: No, Madam Chair, we were  
9 not.

10 MADAM CHAIR: I don't think, Mr. Hanna,  
11 that we would have any -- I don't think we have  
12 anything from the witness that would suggest he has put  
13 his mind to something other than what is being proposed  
14 in the timber management application.

15 Are you saying that we should pick his  
16 brain because he has expertise outside of this hearing?

17 MR. HANNA: No, the question -- obviously  
18 I don't want to get into how we set effluent limits for  
19 pulp mills, that's clearly outside this, it's clearly  
20 outside the scope of this panel.

21 The reason I wanted to refer him to the  
22 terms and conditions of the Federation, particularly  
23 conditions 86 to 89, because in order to implement the  
24 adaptive management approach, according to my  
25 understanding, is that there is some need to collect

1 information once you've made your prediction and once  
2 you've undertaken your management activity.

3 And the question is very simple - in  
4 fact, there is only two more questions I wanted to deal  
5 with - is simply: Would this type of requirement be  
6 consistent with his understanding of the requirement of  
7 other industries that are involved with environmental  
8 protection?

9 MADAM CHAIR: Ms. Seaborn?

10 MS. SEABORN: Madam Chair, the basis of  
11 my objection was that Mr. Hanna was stating on the  
12 record as a fact what he thought the environmental  
13 policy was in the Province of Ontario.

14 In my view, Mr. Hanna can ask these  
15 witnesses hypotheticals if he wants and he can base his  
16 questions in that regard with respect to monitoring and  
17 his terms and conditions. But my objection was: First  
18 of all, I don't think we should be talking about the  
19 MISA Program; and, secondly, I don't think Mr. Hanna  
20 should be permitted to ask questions when the basis for  
21 those questions is an environmental policy for the  
22 Province of Ontario of which I don't believe the Board  
23 has heard any evidence on to date.

24 MR. CASSIDY: And I agree with everything  
25 Ms. Seaborn has said and I would also add, it would

1           then be encumbent on Mr. Hanna to call evidence to  
2           prove his hypotheticals, if they in fact can be proven,  
3           and otherwise they would have no weight whatsoever  
4           because they would just be suggestions that are not  
5           grounded in reality that is evidence before the Board.

6                       MR. HANNA:   Well, Madam Chair --

7                       MR. CASSIDY:   And that in fact I think is  
8           what the proper procedure is that any counsel would  
9           adopt in a situation, is exactly what Ms. Seaborn  
10          suggests, and if the witness is not able to comment on  
11          that hypothetical because it's outside his or her area  
12          of expertise, he's stuck with it and then he has to go  
13          and prove that the situation and prove his case as it  
14          is.

15                      This is a situation that I suggest,  
16          compliance monitoring, where this is fertile ground for  
17          Mr. Hanna to prove it in his own evidence, given the  
18          fact that it's outside their area of their expertise,  
19          and if he wants to argue that we failed to produce some  
20          evidence in respect of an important area, that's his  
21          option.

22                      MR. HANNA:   Madam Chair, first of all, I  
23          certainly will adhere to Mr. Cassidy's request that I  
24          undertake to provide evidence in terms --

25                      MR. CASSIDY:   I didn't ask him to.



1 MR. HANNA: Well, I will, on the MISA  
2 Program if that's what's encumbent on me, I have no  
3 problem with that, one of our witnesses is quite  
4 familiar with it and quite able to respond to this.

5 This isn't a substantive point, in my  
6 view, it was simply just to set the fact that we have  
7 an analogous situation and these witness are fully  
8 familiar with the concept of the onus of monitoring  
9 industrial effluent.

10 MADAM CHAIR: Well, the Board just  
11 doesn't see what relevance it has to this particular  
12 piece of evidence. We think you're asking the wrong  
13 question to this witness.

14 MR. HANNA: All right.

15 Q. Well, Dr. Schiefer, let's forget  
16 about MISA, let's forget about all those things we just  
17 talked about and let's just deal with what you see here  
18 on page 16, if I can.

19 MADAM CHAIR: Of your terms and  
20 conditions?

21 MR. HANNA: Of our terms conditions,  
22 particularly terms and conditions 86, 87, 88 and 89.

23 Q. Now accepting for the time being and  
24 you've made it very clear that you don't --

25 MADAM CHAIR: Excuse me, Mr. Hanna. Has

1 Dr. Schiefer read these?

2 MR. HANNA: Q. Sorry, if you want to  
3 take a moment to read them, Dr. Schiefer.

4 DR. SCHIEFER: A. I read them quickly,  
5 yes.

6 Q. Do you need to read them more slowly,  
7 Dr. Schiefer?

8 A. I think that would depend on your  
9 question, Mr. Hanna.

10 Q. Okay. Well, let's see my question  
11 and we'll decide.

12 Going back to where we left off in terms  
13 of the adaptive management type concept where we have  
14 to monitor the effects when the activity takes place,  
15 you understand that this would provide that sort of  
16 formal framework for that type of information to feed  
17 back into the system.

18 Do you see that in these terms and  
19 conditions?

20 A. I see these as being a compliance  
21 monitoring type of program, yes.

22 Q. And if you as an aquatic scientist  
23 had been advising, whether it be a forest industry  
24 client or whether it was a government client had said  
25 this is the water temperature objective that we want to

1       establish - back to our specific example - this would  
2       be a way for that information to be collected and fed  
3       back into the system; would it not?

4               A. This would be a way. My problem, as  
5       I have stated, is I have a problem putting this into  
6       the context of the whole planning, monitoring,  
7       enforcement process for the timber industry because I  
8       haven't had the opportunity to review that material and  
9       familiarize myself with it.

10              Q. I understand that and you've limited  
11       your response to being, this is one way and not  
12       necessarily the best or the only way. That's what you  
13       said, one way; is it not?

14              A. It is one way, yes.

15              Q. And from a scientific point of view,  
16       could this provide the information that you would need  
17       to be able to evaluate the, I'll use the word accuracy  
18       of your predictive cause/effect relationship, whether  
19       it's a nomograph or some complicated mathematical  
20       model, this would provide a means for that?

21              A. Yes, in the general sense the  
22       monitoring program within the concept of an adaptive  
23       management approach should provide information that  
24       feeds back to the original objective, modifies terms  
25       and conditions to make the tool better in achieving an

1 objective. It is a method of doing that, yes.

2 Q. And a key thing in that is to make  
3 sure the feedback loop is closed; in other words, that  
4 those monitoring results are brought back and reported  
5 somewhere so that the testing of predictions can then  
6 take place; correct?

7 MR. CASSIDY: Well, that again is a  
8 planning issue. He's being asked to decide whether or  
9 not it's necessary to do that from a planning  
10 perspective, and that is just not within this panel's  
11 expertise at all.

12 That would be a question that would be  
13 answered by someone who is called on planning issues,  
14 as to whether or not you need to close the loop.

15 MR. HANNA: I'm afraid Mr. Cassidy  
16 doesn't clearly understand the question.

17 The question was a scientific question  
18 and I was asking this man as a doctor in aquatic  
19 science and as a scientist, would that provide that  
20 sort of information he needs as a scientist for the  
21 feedback. And I've accepted Mr. Cassidy earlier  
22 objection and I'll accept any future objection and I  
23 will not ask this witness anything to do with the  
24 timber management planning process.

25 My question to him was as an aquatic



1 scientist and in terms of how he would go about  
2 improving his ability to predict aquatic impacts using  
3 the adaptive management approach, and I asked him:  
4 Would this provide a way to close the loop.

5 And I see that fully within his expertise  
6 and it does not violate Mr. Cassidy's concern about  
7 Panel 10 and the scope of evidence in Panel 10.

8 MR. CASSIDY: I thought he answered it by  
9 saying it would provide a means from the scientific  
10 perspective.

11 MR. HANNA: And I asked the question: Is  
12 this a necessary part to close the loop, and I still  
13 ask that question.

14 I asked it to Dr. Schiefer as an aquatic  
15 scientist, whether he sees it as a necessary component  
16 in the process?

17 MADAM CHAIR: Do you understand the  
18 question, Dr. Schiefer?

19 DR. SCHIEFER: I believe I do. I think I  
20 will respond by saying that in any monitoring program I  
21 have been involved in designing or carrying out, that  
22 the feedback mechanism is always part of that process.

23 MR. HANNA: Thank you, Dr. Schiefer.

24 Madam Chair --

25 MADAM CHAIR: Did we tell you, Mr. Hanna,

1           about 4:30 today?

2                       MR. HANNA: Yes, I did know about 4:30  
3           and I was just about to start a new topic, and this is  
4           probably a convenient time to break. I see Mr. Cosman  
5           is here, and --

6                       MADAM CHAIR: Thank you for your  
7           cooperation.

8                       Mr. Cosman?

9                       MADAM CHAIR: Thank you very much,  
10          gentlemen, we'll see you. Yes, I don't know when you  
11          will be back. Where are you going next week, you're  
12          off to a conference, where?

13          ---Discussion off the record

14          ---(Panel withdraws)

15                       MR. COSMAN: Yes.

16                       MADAM CHAIR: Hello, Mr. Cosman. Mr.  
17          Martel is extremely punctual and we are going to rise  
18          at five o'clock today.

19                       MR. COSMAN: I will ensure that that  
20          happens, and whether or not I do or not, I'm sure you  
21          will rise in any event.

22                       MADAM CHAIR: I think so.

23                       MR. COSMAN: Madam Chair, good afternoon.  
24          I have spoken to the various counsel who weren't here  
25          last time and I have I think a pretty good picture of

1 the time that is projected to complete the Industry's  
2 final panel, Panel 10.

3 But before doing that, I just might note  
4 the time that Mr. Cassidy has indicated to me will be  
5 left for completion of this panel, just so that we will  
6 have that in context.

7 I understand that the Ontario Federation  
8 of Anglers & Hunters, Mr. Hanna has a day left, so that  
9 would be one day, then the other parties together I  
10 think would make a day, but I will give you the  
11 breakdown of projected times:

12 NAN two hours; Ministry of Natural  
13 Resources, two hours; Ministry of the Environment one  
14 hour; and re-examination which of course will,  
15 depending what happens there, but one to two hours. So  
16 that would be a full day to complete 9A, to complete  
17 this panel that you are hearing.

18 With respect to Panel 10, we have - and I  
19 will go through the full package just to give you - I  
20 think you had some of the times last time, but I will  
21 give it to you in one package.

22 MADAM CHAIR: Were you going to go  
23 through 9B as well?

24 MR. COSMAN: 9B, I understand, will take  
25 two, two and a half days max.

1 MADAM CHAIR: That's still the estimate?

2 MR. MARTEL: That's if no one changes?

3 MR. COSMAN: Sorry?

4 MR. MARTEL: That's if no one changes.

5 MR. COSMAN: That's right. Of necessity  
6 some of these are estimates.

7 MR. MARTEL: Yes.

8 MR. COSMAN: With respect to Panel 10,  
9 the estimates that have been provided are as follows:

10 The evidence-in-chief will be two days  
11 max; Ministry of the Environment at least one full day;  
12 MNR two and one half days; Ontario Federation of  
13 Anglers & Hunters, two full days; Forests for Tomorrow,  
14 one to two days; NAN, one half to threequarters of a  
15 day; and the Ontario Metis and Aboriginal Association,  
16 one half day.

17 Now, my addition if that is right -- if  
18 my addition is right, that will mean that Panel 10 will  
19 take between nine and a half days to 11 days. That's  
20 assuming the Ministry of the Environment takes only one  
21 day; if they go longer, it might be more, but the  
22 minimum time would be nine and a half days to complete  
23 Panel 10.

24 MADAM CHAIR: Excuse me, Mr. Cosman.

25 Mr. Freidin, how long did we spend on



1 MNR's planning panel, was that panel...?

2 MR. HANNA: 15.

3 MADAM CHAIR: 15. Was it six weeks. How  
4 long was it?

5 MR. FREIDIN: I don't remember. I try to  
6 forget.

7 MR. MARTEL: The operative word is long.

8 MADAM CHAIR: Okay. Sorry, Mr. Cosman, I  
9 just wanted a sense of, having been through a panel  
10 with similar evidence, I wanted to know --

11 MR. COSMAN: Just so you can get a sense  
12 of it, that's right.

13 MADAM CHAIR: --how long it would take.

14 MR. COSMAN: And, as you know, we are  
15 proposing a planning system which is radically  
16 different from the Ministry of Natural Resources.

17 MADAM CHAIR: Yes.

18 MR. COSMAN: It is our wish to complete  
19 the evidence before the end of this month and we are  
20 prepared to proceed.

21 Now, the logistics though of this, given  
22 the time estimates, appear to make this unlikely. We  
23 are in the Board's hands as to what we should do.

24 I think I indicated when I last spoke to  
25 you that for the reasons I gave - and I won't repeat

1       them - we didn't want to have our case, or at least the  
2       cross-examinations split over the summer; however, at  
3       the same time I don't want to lose or cause the Board  
4       to lose any time, and if the Board thinks that it is or  
5       considers that the loss of, I guess it would be four  
6       days, is critical, we would be prepared to start and do  
7       what we can.

8               What I would suggest to the Board, my  
9       witnesses are coming from out of town, the majority of  
10      them are from the north, and if the Board thought it  
11      was -- would wish us to start -- let's assume the 19th  
12      and 20th are long days, hopefully Mr. Hanna might be a  
13      little shorter than he anticipates or the other  
14      parties, and we will be ready to start on the 20th  
15      whenever this Panel 9A is completed.

16              That would mean that we would probably  
17      finish -- sorry.

18      ---Discussion off the record

19              MADAM CHAIR:  Sorry, Mr. Cosman.

20              MR. COSMAN:  I think I've said almost all  
21      that I'd like to say.

22              No. 1, I am ready to go and can start  
23      tomorrow and would love to get this finished, but I  
24      presume that with the completion of Panel 9A on the  
25      20th, I would be ready to start as soon as that is

1 finished, I'll have my people in town from out of town.  
2 there are three witnesses from the north, one witness  
3 from Cornwall, and we would be ready to proceed at the  
4 end of that day or halfway through it. It sounds more  
5 likely that we would be starting on the 21st.

6 If we start on the 21st, that would mean  
7 that we would have one day of examination-in-chief on  
8 the 21st, and then I don't believe we have a schedule  
9 for the next week yet, but assuming it's the same  
10 schedule, we'd have the completion of it and then two  
11 days of cross before the break. So that's where we  
12 would be.

13 I think, as I indicated to you, it  
14 concerns me that there be such a wide distance in time  
15 between the commencement and end of a package of  
16 evidence, especially as far as witnesses are concerned.  
17 But, in the circumstances, I don't want to do anything  
18 at all that would cause the loss of any time and I'm  
19 prepared to start if you thought it would be  
20 worthwhile.

21 MADAM CHAIR: Thank you, Mr. Cosman.  
22 We are going to take this information away with us and  
23 look at it and see what we think we can do in terms of  
24 scheduling.

25 I might notify the parties that with

1       respect to this panel, there is nothing set in stone  
2       with respect to the holiday schedule. If we thought  
3       that it had to be shifted around, we would look  
4       seriously at doing that.

5               MR. COSMAN: I don't know what  
6       difficulties that would create for the parties. I  
7       mean, only because of the Board having given a long  
8       advance notice on that. I know some parties and some  
9       witnesses have fixed -- they were told one thing was  
10      fixed and that was those weeks.

11             By the way, one other thing, I'm sorry, I  
12      should have mentioned. You do have a week in August,  
13      being the week of August 13th in which the OPFA is to  
14      testify. Now, I have not been able to confirm with all  
15      of our people that they would be available that week as  
16      of yet, but if needs be, that is another alternative  
17      that would be open. If we do start, we may be able to  
18      finish, but that would mean we would be splitting our  
19      evidence into three sections possibly, which would make  
20      it very difficult.

21             But I know that the Board and all the  
22      parties would like to advance this and as long as it  
23      isn't done in such a way that interferes with  
24      everybody's ability to absorb the amount of evidence  
25      that is being put before this Board, we will do



1           whatever we can to accommodate.

2                   MADAM CHAIR: All right. Thank you, Mr.  
3           Cosman. We appreciate your cooperation.

4                   Mr. Cassidy?

5                   MR. CASSIDY: Just one final matter. I  
6           just wanted to advise the Board this panel will be  
7           coming back on the 19th, as you know, and we will have  
8           9B up next week. I have asked Dr. Schiefer to stay in  
9           attendance so he could hear the scheduling  
10          possibilities. They are well aware of the need and/or  
11          requirement not to discuss their evidence with anyone  
12          in my office or with anyone else; however, it may be  
13          necessary for Dr. Schiefer to communicate with my  
14          office in terms of scheduling should there be any  
15          problems, and I wanted to advise the Board that that  
16          may be necessary to do and it would simply be  
17          restricted to simply advising him of any scheduling  
18          difficulties that may crop up, of which I hope there  
19          are none.

20                   MADAM CHAIR: Any objections from the  
21          parties?

22                   (no response)

23                   Thank you, Mr. Cassidy.

24                   Ms. Seaborn?

25                   MS. SEABORN: Madam Chair, with respect

1 to the summer schedule, certainly I support and thank  
2 Mr. Cosman for his willingness to go ahead with Panel  
3 10, certainly our client supports moving this matter  
4 along as quickly as possible.

5 When we had met with Ms. Devaul early in  
6 the spring or the winter to discuss the timetable for  
7 the satellite hearings, I believe it had been  
8 anticipated at that time that if we did not finish  
9 Panel 10 by the end of June we would have one week, if  
10 not two weeks, early in August to complete that panel.

11 At that time I believe the summer break  
12 had even been scheduled to end as of Monday, August  
13 6th, and it was a subsequent notice that then extended  
14 the summer break to August 10th. So certainly we had  
15 always anticipated those two weeks were a possibility.

16 My client will certainly have grave  
17 concerns about any extension of the Board's sitting  
18 time into the first week in July because I know that  
19 while I'm available, I know that my client and the  
20 planning evidence is certainly the panel that we're  
21 most interested in, as we would be cross-examining  
22 last.

23 I wanted to put that point on the record  
24 that we would have some difficulty with that sort of  
25 rescheduling.

1                   MADAM CHAIR: Well, perhaps I would ask  
2                   the parties to discuss with their clients the  
3                   possibility of pushing up the time a bit in August. As  
4                   Ms. Seaborn said, originally our schedule said that we  
5                   would begin again the week of August the 6th.

6                   Could you notify the Board as quickly as  
7                   possible about that week? That's not to say that --  
8                   we've just got to look at everything, and that would be  
9                   helpful if you would let us know.

10                  MR. CASSIDY: And one final matter. Ms.  
11                  Kleer on behalf of NAN has provided me with a letter  
12                  dated June 5th attaching copies of documents they  
13                  intend to refer to in their cross-examination.

14                  I wanted to simply advise the Board that  
15                  I intend to give this whole material material to the  
16                  witnesses because it's for their review prior to their  
17                  cross-examination.

18                  MR. FREIDIN: Can you read that out, Mr.  
19                  Cassidy, just so that we'll know -- or do you think we  
20                  can get copies of that as well later?

21                  MR. CASSIDY: I have an extra copy I can  
22                  arrange to provide to you.

23                  MR. FREIDIN: Thank you.

24                  MR. CASSIDY: (handed)

25                  MR. HANNA: Madam Chair, something you

1           might consider with respect to Mr. Cosman's proposal, I  
2           haven't had a chance to speak to him about it, but you  
3           might consider having the evidence-in-chief come in  
4           before the summer break, rather than -- a witness in  
5           cross-examination for six weeks or something is  
6           really -- it can be quite onerous, and I can see some  
7           reason perhaps to have the evidence-in-chief brought  
8           in.

9                       MR. MARTEL: It's only two days. You  
10           lose two days.

11                      MR. HANNA: Well, I just simply put it  
12           out for the Board's consideration.

13                      MADAM CHAIR: Is there anything else?  
14                      (no response)

15                      All right, thank you very much.

16                      One thing, Mr. Cosman, when you begin  
17           Panel 10 do you intend to make as an exhibit, if the  
18           parties don't have any objections, all their terms and  
19           conditions. I think we only have MNR's and OFAH's and  
20           yours now as an exhibit, and I don't think the others  
21           have been entered as exhibits, and I can see us going  
22           back and forth and --

23                      MR. COSMAN: Yes, I don't even think ours  
24           is an exhibit yet. As you know, they have been filed  
25           but they have not been made exhibits.



1 MADAM CHAIR: Right. All right.

2 MR. COSMAN: But to the extent that  
3 parties may be referring to their own terms and  
4 conditions which, as you know, are going to change as  
5 of June 15th when we see the new MNR conditions and  
6 thereafter, but at least to have the drafts.

7 MADAM CHAIR: Oh, I see. Yes, I see what  
8 you're saying.

9 MR. COSMAN: See, it's a fluid process to  
10 a certain extent.

11 MADAM CHAIR: I can just see the pages  
12 turning as we go from party to party's terms and  
13 conditions.

14 MR. COSMAN: I certainly intended to file  
15 our terms and conditions, if they haven't been filed -  
16 I will have to confirm that - and I suppose the  
17 question would be whether other parties were going to  
18 cross-examine using their own terms and conditions.

19 MADAM CHAIR: You're saying if they're  
20 not doing it before June 15th, we might have a  
21 different version at that point anyway?

22 MR. COSMAN: Certainly any party that  
23 wanted to cross-examine with respect to the initial  
24 draft filed, they certainly could -- you know, it would  
25 be open for them to do it, but why don't -- I could, if

1 the Board thought it would be helpful, I could arrange  
2 to have -- they form a volume that thick. (indicating)

3 MADAM CHAIR: Yes.

4 MR. COSMAN: And I could maybe ask the  
5 parties or any party who intends to rely upon their  
6 terms and conditions to ensure that we have sufficient  
7 copies here at the outset of Panel 10 that we can file  
8 it.

9 MADAM CHAIR: Okay.

10 MS. SEABORN: Madam Chair, I'll undertake  
11 to file ours next week, that's no problem. The Board I  
12 know has two or three copies of them now from the  
13 original filing date and formally when we have a moment  
14 next week make ours at least an exhibit because we will  
15 be referring to ours in cross-examination.

16 MADAM CHAIR: We're never sure -- well,  
17 we have the copies, we just can't guarantee they're  
18 going to be at our elbows.

19 MS. SEABORN: I will ensure they are made  
20 an exhibit.

21 MADAM CHAIR: All right. Thank you very  
22 much.

23 MR. COSMAN: In fact I think what I will  
24 do, Madam Chair, to make it easy for everyone I will  
25 file a volume that has all of them at the outset of our

1 case and that way you won't have to go outside of that,  
2 they'll just be tabbed.

3 MADAM CHAIR: Thank you very much, Mr.  
4 Cosman.

5 We will adjourn until -- no, not  
6 tomorrow.

7 MR. HANNA: June 19th I believe.

8 MR. CASSIDY: No, it's 8:30 a.m. on June  
9 13th.

10 MADAM CHAIR: 8:30 a.m. on June 13th.  
11 Thank you very much.

12 By the way, I have received a note that  
13 Panel 15 of the Ministry's case took about 20 hearing  
14 days.

15 --Whereupon the hearing adjourned at 4:45 p.m., to be  
16 reconvened on Wednesday, June 13th, 1990, commencing  
at 8:30 a.m.

17 [copyright, 1985]

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